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GUSTAVUS A. NOTT

[From Schurigio: Lithologia Historico-Medica, Dresden, 1744.]

ANNALS OF MEDICAL HISTORY

New Series, Volume VI July, 1934 Number 4

ALBERT LEON CHARLES CALMETTE (1863-1933)

By KONRAD E. BIRKHAUG, M.D.

Paris

It was with the most profound sorrow that the scientific world learned of the untimely death of Albert Calmette, assistant director of the Institut Pasteur at Paris, in the early hours of October 29, 1933. The brilliant discoverer of the antivenin serum and the BCG (Bacillus Calmette-Guèrin) vaccine for the prevention of tuberculosis had only five days before his sudden death participated in the twentieth Congrèss internationale d'hygiène with his usual inexhaustible and serene enthusiasm in all proceedings which concern the campaign against tuberculosis. Shortly afterwards he was taken ill with grippe. In rapid succession followed an ominous crisis of infectious hepatitis, cardiac collapse and acute peritonitis which sealed his fate. The death of one of the world's greatest scholars on experimental tuberculosis in man and animals removes from the world of science an illustrious standard-bearer of the tradition of Louis Pasteur whose loss will be increasingly felt throughout the intellectual world, for Calmette was one of the *pastoriennes* whose place can never be filled. With him passes some of the glory and force of French science in which all humanity has participated.

Albert Calmette was born at Nice on July 12, 1863. His early education was received at the Lycée Blaise-Pascal at Clermond and at the Lycée de Brest as interne in preparation for the naval college. Calmette's early penchant for the sea was temporarily dissipated following a severe attack of typhoid fever in 1876 and upon recovery his parents entered him at the Dominican Lycée Saint Charles at St. Brieuc. After his *baccalauréat-ès-lettres* at Rennes and Paris he entered L'Ecole de Médecine Navale de Brest in 1881. Here he came under the influence of the eminent clinician and anatomopathologist, Dr. Armand Corre, who instilled in Calmette his first taste for microscopical work. It was during this time (1881–83) that the scientific world became conscious of the existence of microbes in relation to human disease. Dr. Corre opposed bitterly these new notions. On November 1, 1883, Calmette embarked on the transport *Le Mytho* at Toulon and for two years served as *aide-médecin de la marine* in Chinese waters, first under Admiral Meyer and later under Admiral Courbet. At length he changed to the cruiser *La Triomphale*, under command of Commandant Baux and assisted at the bombardment of Ming-Po and the great naval battles at Fou-Tcheau, Tau-Sui-Kelung and the isles Pescadores. Following the death of Admiral Courbet from cholera, he returned to Paris in June, 1885 and took the doctorate at the Faculté de Paris. His thesis on "Lymphangitis filarienne" was defended *sans éprouver un seul échec* before the great clinician and adversary of Pasteur, Dr. Peter. His orderly and excellent clinical material had been collected on the service of Sir Patrick Manson at Hong-Kong, the renowned discoverer of the Culex transmission of human filariasis.

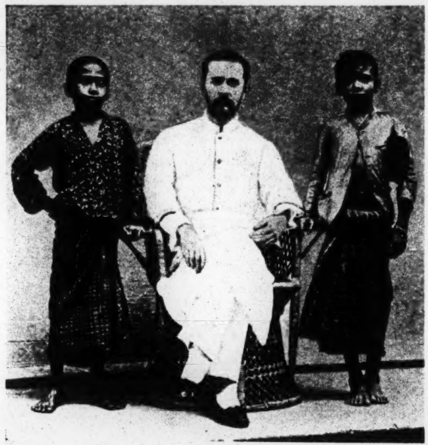

Fig. 1. Professor Calmette with the Two Malay Boys First Vaccinated against Rabies at Singapore, between April 18 and May 2, 1891.

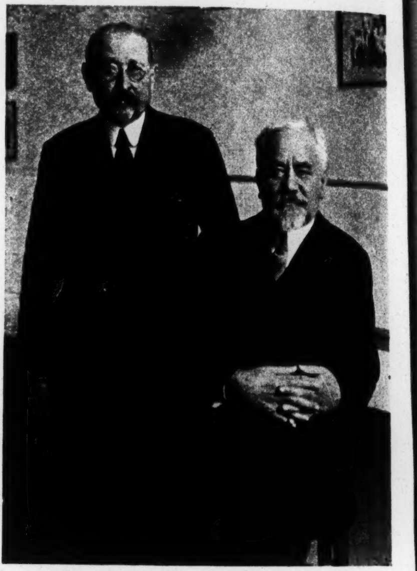

Fig. 2. Professor Calmette and His Assistant, Dr. C. Guèrin, November, 1932.

The years 1886–87 Calmette spent at Gabon in the Congo, as colonial physician. Here he contracted malaria and suffered remissions at fifteen day intervals during the entire year. He returned to France and married Mlle. Emilie de la Salle on January 11, 1888. On March 25 that same year he left with his wife on *Le Drac* for St. Pierre-Miquelon, Newfoundland, to serve the 6000 population of fishermen as assistant physician to Dr. Saffre. During a protracted illness of Dr. Saffre, Calmette was by necessity forced to assume full charge of the medical practice. Together with the aid of three sailors and his wife he performed surgical operations, including amputations as well as the removal of cataracts, not to mention obstetrical interventions. "Ce fut une rude école et combien profitable a ma jeune expérience!" he said in after years. The intellectual life at this seaport was shared with the pharmacist Pottier, with whom Calmette exercised fencing daily, and an American missionary from whom he learned English. Inspired by the book on bacteriology written by Bizzozere and Firket and the reading of *Annales de l'Institut Pasteur,* of which Calmette was one of the first subscribers in 1887, he began to study bacterial cultures and succeeded in isolating in pure culture a bacillus from *rouge de morue* which produced the vermillion pigment and trimethylamine. He also succeeded in inhibiting the disease by small amounts of sodium sulphite. Following the death from cholera of their first and ten months old child, Calmette and his wife returned to France in 1890 and passed along the route through Halifax, Quebec, Montreal, Toronto, Niagara, Buffalo, Albany and along the Hudson to New York.

Upon reaching Paris he sought the advice of Dr. Emile Roux on his studies on the *rouge de morue* bacillus. Dr. Roux became deeply interested in Calmette and offered him a place in his laboratory. During this time Calmette attended the course in general bacteriology by Metchnikoff which consisted of twenty-five lessons. A serious turn of events happened when Dr. Roux spoke with Pasteur about the remarkable talents for original research which he had detected in Calmette. Pasteur hurriedly offered Calmette the responsibility of organizing an Institut Pasteur at Saigon in Indo-China for the production of antirabic and antivariolic vaccines for the Extreme Orient. Calmette recently related the conversation that transpired between Pasteur and himself:

> When Calmette entered Pasteur's office, the master bacteriologist turned upon Calmette:
>
> "Calmette, vous qui êtes marin, est-ce-que vous seriez disposé à vous rendre là-bas pour cette tâche? Si cela vous va, je vais proposer à M. Etienne de vous confier le soin d'organiser et de diriger le laboratoire dont il s'agit. Réfléchissez et donnez-moi bientôt une reponse."
>
> After a brief moment's hestiation Calmette answered:
>
> "C'est tout réfléchi. J'accepte et je suis à votre entière disposition et je partirai quand vous voudrez."

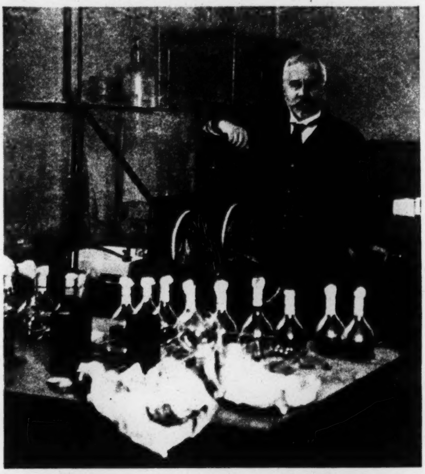

FIG. 3. PROFESSOR CALMETTE IN HIS OLD LABORATORY AT INSTITUT PASTEUR (1926).

Calmette has in later years said that never once had he cause to regret the decision which must have seemed rather unpremeditated to Pasteur.

Calmette arrived at Saigon on January 8, 1891 and immediately set about organizing and building the first exotic Institut Pasteur. After having set in motion the production of antirabic vaccine (rabbits inoculated with the rabies virus at Paris were taken along and every tenth day along the route new rabbits were inoculated to keep the virus alive during the long voyage from France) as well as smallpox vaccine, Calmette devoted his time to the study of dysentery, undulant fever, Asiatic cholera and liver abscesses. Incidentally he made an industrial discovery: the production of grain alcohol through the process of fermentation of rice and other cereals by means of a fungus which he gracefully called after his master and friend: *Amylomyces Rouxii.* This period marks, however, the first important and great medical discovery of Calmette: the production of a potent and therapeutic serum against snake-venom. Calmette relates how chance played him excellent service in this discovery, for a flood at Saigon had brought a hoard of cobras from the jungle into town and a snake charmer brought a box of these to Calmette's laboratory. Scientific curiosity prompted Calmette to investigate the antigenic principle of cobra poison and by following the example of Arthus he injected small quantities into animals and discovered that the same animals remained refractory to lethal doses of the poison and furthermore, that the serum of the vaccinated animals protected against killing doses of the cobra poison. Henceforth, the antivenin serum injected into persons bitten by the cobra has saved annually thousands of lives in the cobra-infested countries and Calmette is numbered among Pasteur's most illustrious pupils. Only about four months before his death Calmette, in cooperation with Dr. A. Saenz, continued the study of the cobra venin in relation to human cancer. Calmette was particularly struck by the analgesic action of the cobra venin, but also discerned an even greater application to human cancer of this noxious poison, namely its cytolytic action on mouse cancer.

Calmette returned to Paris in 1893 in order to perfect the production of the antivenin serum under the able guidance of Roux. A thorough-going study of the cobra poisons and the clinical results obtained with the antivenin serum has been incorporated in Calmette's book titled: "Les Venins, Les Animaux Venimeux et La Sérothérapie Antivenimeuse."[1]

At the same time that Calmette achieved the antivenin serum, he prepared with Roux, Yersin and Borrell an anti-pest serum during 1893-94 and in 1899 he was sent on a mission to Porto with Salimbeni and Mme. Calmette to study and combat an extensive epidemic of bubonic plague. Here he proved successfully the therapeutic value of the anti-pest serum.

The results of the Behring-Kitasato antitoxin against diphtheria inspired Roux and his colleagues to perfect the same for France. At the International Congress of Hygiene in Budapest in September 1894, Roux laid before the scientific world the first results of treatment of croup by the diphtheria antitoxin produced in horses. These results were obtained with the industrious assistance of Drs. Louis Martin and August Chaillou as well as a large group of Paris internists. The need for the production of large quantities of diphtheria antitoxin for France and her colonies suggested itself immediately, but funds were lacking. Calmette together with Nocard, Duclaux and Metchnikoff became enthusiastic about this method of treatment and Calmette prevailed upon his brother, Gaston Calmette, editor of *Figaro,* to make a public appeal for funds through his newspaper. Within two weeks a million francs had been collected. Immediately, a committee bought the Chateau de Villeneuve-l'Etang at Garches, the castle where Napoleon III and the empress Eugénie had spent their honeymoon, and built laboratories and stalls and soon set about to produce the diphtheria antitoxin in sufficient quantities to supply the needs of France and her colonies. This remarkable institution still remains in operation for the production of all therapeutic sera required by the Institut Pasteur at Paris.

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[1] Paris, Masson, 1907.

In December, 1894, a serious change of scientific interest took place in Calmette's life, occasioned by the fact that a delegation from Lille had arrived in Paris to offer Pasteur and Roux the construction of an Institut Pasteur in that northern city for the production of the diphtheria antitoxin. Calmette was approached by Dr. René Vallery-Radot about assuming the directorship of the proposed institute at Lille. Calmette expressed no desire to leave the delightful scientific atmosphere at Paris for a northern exile. Further pressure was brought to bear upon him by Pasteur himself and Roux. The wishes of the ailing Pasteur, who at this time suffered excruciating uremic crises that necessitated a continual watch at his bedside by his colleagues, prevailed upon Calmette to accede to Pasteur's demand. At the same time as Calmette directed the affairs of the Institut Pasteur at Lille, he served as professor of Bacteriology at the Lille university. Following a series of preliminary investigations by which Calmette succeeded in purifying the sewage and the city's drinking water, he became interested in ankylostomiasis which raged among the miners in the northern provinces. He made a thorough biological study of the evolution of the parasite both in nature and in man and devised a system of prophylaxis by means of which he eliminated from the mines persons showing parasitic eggs in the feces. In order to impress upon the miners the necessity of indispensable precautions for the check of the disease, Calmette found it necessary to organize dispensaries of social hygiene in the districts infested with ankylostomiasis. This new application of popularizing hygienic principles led Calmette to organize the first tuberculosis dispensary on the Continent. Here the population was given liberal advice about the hygiene and treatment of individuals suffering with tuberculosis and unable to be admitted to sanatoria. This first tuberculosis dispensary was built at Lille and named after his master and friend: "Dispensaire antituberculeux Emile-Roux." Shortly afterwards he constructed the popular and renowned sanatorium at Montignyen-Ostrevent, near Douai. This fecund idea of tuberculosis dispensaries has now become an essential part of mankind's struggle against tuberculosis and will always be associated with Calmette's ingenuity and interest in public health and hygiene.

The sojourn at Lille produced a decided change in Calmette's scientific interest which henceforth became concentrated in the study of tuberculosis. It has been rightly said that this new interest became an obsession in his life. For the experimental studies of tuberculosis in all its various aspects, modes of infection, diagnosis and prevention by vaccination, Calmette called to his aid Drs. Guèrin, Massol and Breton. Their first efforts disproved the generally accepted notion held by pathologists that tuberculosis is mainly spread and contracted by the respiratory tract. Calmette established experimentally that the tubercle bacillus was just as frequently introduced by the digestive tract. He further studied the tuberculin reaction as a diagnostic aid and improvised the ophthalmic reaction. Another decided progress in diagnosis was made by applying the complement-fixation test to tuberculosis, by means of which tuberculous antibodies were demonstrable in the blood of individuals suspected of tuberculosis. Together with Massol he prepared an exceedingly sensitive antigen and described a method of antibody titration which is now in universal use.

In the course of numerous experiments Calmette established the importance of massive infection and of reinfection in the propagation of tuberculosis. He demonstrated experimentally that a heifer infected by the feeding of only a few tubercle bacilli contracted a benign form of tuberculosis which eventually healed completely, provided that no reinfection took place. On the other hand, if the animal was fed repeatedly, at short intervals, large quantities of tubercle bacilli, the animal became increasingly allergic and the original lesions which had shown a tendency to cicatrize became reactivated and the animal died from generalized tuberculosis.

Above all, the researches which completely absorbed Calmette's interests during the last twenty years and which were destined to become *l'oeuvre capitale de sa vie scientifique* were his studies on the experimental prevention of tuberculosis. One fact was firmly established in his mind, namely the uselessness of vaccinating animals and man with dead tubercle bacilli or bacterial products. Where Grancher and Behring had discontinued their unsuccessful studies, Calmette continued, always hoping to accomplish adequate results by the use of living tubercle bacilli that had been deprived of their original virulence. It was already clear to him that only animals that harbored living tubercle bacilli which produced discrete and healing tuberculosis showed any appreciable and durable immunity against reinfection. In order to avoid the mistakes committed by other investigators who used small quantities of living and virulent tubercle bacilli which unfortunately proved dangerous, Calmette, with the assistance of Guèrin, inaugurated a new method of cultivating the tubercle bacillus in subcultures. They inoculated virulent bovine strains on glycerinated potato boiled in ox bile. The development of the bacilli on this medium was very rapid and the growth more creamy than that observed on the ordinary glycerinated potato. After 230 passages on this special medium, which took place during a period of thirteen years, Calmette and Guèrin observed that an originally excessively virulent bovine strain had become completely avirulent, although it still retained its tuberculinogenic properties. An enormous series of guinea-pigs, rabbits, calves and chimpanzees were inoculated with this avirulent bovine strain, called BCG (Bacillus Calmette-Guèrin), by the subcutaneous, intravenous as well as digestive routes and the results were always the same. It remains a mystery, however, how certain laboratories have observed an excessively high virulence of BCG for laboratory animals. The question arises concerning the technique in handling the cultures, as at the tragic occurrence at Lübeck which was proved to be due to contamination, or the occurrence of spontaneous tuberculosis among the animals inoculated with BCG, or again, the injection of excessive amounts of the BCG culture, which like similar injections of heat-killed tubercle bacilli will cause acute pneumonic consolidation and tubercle formation indistinguishable from the chronic tubercles produced by living bacilli. These or other factors must be seriously questioned when virulence is claimed for the BCG vaccine. The majority of experienced workers in tuberculosis the world over are in accord that the BCG vaccine is harmless. When Calmette was satisfied about the relative avirulence of the BCG organism he committed himself as follows: "J'ose ajouter, qu'il ne paraît improbable qu'on puisse, un jour à venir, en proposer l'emploi pour la vaccination des jeunes enfants."

With this aim in view, Calmette and Guèrin inoculated the BCG vaccinated animals with virulent cultures of tubercle bacilli and observed a remarkable immunity, which, though not complete, was of a high degree in cattle, lasting as long as eighteen months during which period no tuberculous lesions were found. The method of vaccinating cattle with BCG was put into practice in 1914. The report from one infected establishment stated that 110 calves inoculated yearly with BCG during five years, all remained healthy though many were from tuberculous mothers and were fed on infected milk. Thirty of these which were slaughtered were found to be free from tuberculous lesions. These experimental results furnished Calmette with the indispensable data before he proceeded with human experimentation.

The World War suddenly interrupted these brilliant and suggestive investigations and Lille was captured by the enemy. Calmette remained at his laboratory during his country's greatest trial, to aid the bewildered population in solving the unbearable social and hygienic difficulties imposed upon it by an implacable enemy. The plight of the infants robbed of their proper nourishment, together with innumerable atrocities sustained by the vanquished inhabitants moved Calmette to pen the following indictment to the enemy:

> It seems utterly futile to forgive or to justify the cruel tortures perpetrated in cold blood on an entire population stripped of every means of defence! Those who enjoy liberty in France can scarcely comprehend our profound resentment. Yet, certain quarters contend that the German nation as a whole is not responsible for the horrible crimes set in motion by the commanding officers of the German army. How one would wish this were true! But after having been eye-witnesses of the unbridled passion and zeal with which both young and old soldiers of the Landsturm and officers who are not professional militarists—alas, among this latter class physicians too!—do perpetrate the most odious acts without any word of excuse, of regret or of pity, then we must confess that as a general rule, and with exceedingly rare exceptions, the heart of a German remains inaccessible to noble, generous or ordinary human sentiments!

The enemy sought every possible means of accusing Calmette of espionage. At first he was accused of sending wireless messages to the French headquarters. During the search of his laboratories for the non-existent wireless apparatus, the enemy carted away metal apparatus and implements which could be converted into armaments and nearly stripped the laboratory of its essential scientific instruments. Maddened by their initial failure to indict Calmette, the German medical officers accused him of using his experimental pigeons as messengers to the enemy. They ransacked his laboratory and found a number of pigeons bearing a ring on their leg with a serial number and the name of Antwerpen. Calmette declared that these pigeons were used for the transmission of fowl tuberculosis. The German officers refused to believe this explanation and demanded to see his laboratory protocol record of the said experiment. Under a threatening guard Calmette searched through his files and the meticulous order with which he kept his records doubtless saved him his life. He found the required data as well as the bill of purchase signed by his assistant, Dr. Raymond Letulle. This bill proved that the pigeons had been sent him from Antwerp and that their serial number corresponded with those stated in the bill of purchase. But this did not close the incident. An autopsy was ordered by the commanding medical officer and this was performed by a German bacteriologist, Dr. Talliefer. The one pigeon examined proved to be tuberculous and the accusation against Calmette was withdrawn without any excuse being offered him. "Fate played me a great boon that time," said Calmette afterwards, "for among all the pigeons inoculated with the tuberculous material, the pigeon examined was the only one that had contracted tuberculosis."

When the German command at length realized the inadmissibility of their repeated accusations against Calmette, their fury against him redoubled. Being unable to strike directly at Calmette, they arrested Mme. Calmette on January 11, 1918, on orders of General von Gravenitz. As a hostage she was deported to a forlorn prison-camp near Hannover. The agonies of that premeditated insult to this eminent French savant increased with the passing months, for all means of communication with his imprisoned wife and officer son who fought somewhere along the French front, were denied him until the end of the war. But the severe ordeals of the World War failed to dampen his scientific interests. During these four years he wrote that great medical classic "L'Infection bacillaire et la tuberculose chez l'homme et chez les animaux,"[2] in which he collated all the data available on the subject up to date. One must but marvel at such equanimity of scientific devotion!

Calmette's sense of fair play and extreme generosity of heart are amply illustrated by the following incidents recently told the author by Dr. Fritz Meyer. When the latter as German medical officer entered Calmette's laboratory at Lille during the occupation by the enemy, Calmette recognized him and turned to him gravely and said: "Your nation is a savage nation! To punish me for my blamelessness, your savage nation has arrested my wife as a hostage!"

Doctor Meyer's offer to mediate for Mme. Calmette's release shocked Calmette profoundly and he refused to accept for his wife a favor denied other French women hostages. When Dr. Meyer recently was expelled from Germany, in the wake of the anti-Semitic atrocities, Calmette offered him a place in his laboratory, together

[2] Paris, Masson, 1920, ed. 3, 1928.

with six other exiles from the country that had failed to show Calmette any excessive sympathy during the German occupation of Lille.

It was not until after the armistice that Calmette learned that he had been called in July, 1917 to succeed Metchnikoff as assistant director of the Institut Pasteur at Paris. In July, 1919 he left his position at Lille and joined the Institut Pasteur at Paris. Immediately he surrounded himself with a small group of capable and energetic investigators, Boquet, Nègre and Valtis. Again, he resumed his studies of the BCG vaccine and together with Boquet and Nègre he once more confirmed the harmlessness of the BCG vaccine for the small laboratory animals and their increased resistance against experimental superinfection with virulent tubercle bacilli. Together with Guèrin he demonstrated the same increased immunity, by means of the BCG vaccination, in cattle, and with Wilbert in monkeys. In July, 1922 Calmette first permitted the able pediatricians, Drs. Weill-Halle and Turpin, to administer the BCG vaccine by mouth to infants born of tuberculous parents and living in tuberculous surroundings. The results obtained with three doses, each consisting of 10 mg. of BCG bacilli, were satisfactory and between 1922 and 1924, Weill-Halle and Turpin had vaccinated 321 newborn infants. The first results were so encouraging that in July, 1924 Calmette permitted the general distribution of the BCG vaccine, prepared at the Institut Pasteur, to doctors and midwives who demanded the vaccine. Up to the present about 650,000 newborn infants have been vaccinated in France and about the same number throughout the world. The results of numerous statistics collated by Calmette and Weill-Halle have shown that the BCG vaccination has diminished the mortality of tuberculosis as well as the general morbidity and mortality. The inquiry made by Calmette in 1928 showed that the mortality from tuberculosis was 15.9 per cent among the non-vaccinated infants and 3.4 per cent among the BCG vaccinated infants living under as near as possible similar surroundings as the non-vaccinated children. In New York City, Dr. William H. Park has carefully studied the effect of BCG vaccination on infants born of tuberculous mothers in hospitals and he has compared the mortality of this group with that of an equal number of controls born of tuberculous mothers and raised under identical conditions with those of the vaccinated infants. Between birth and one year, the mortality of the non-vaccinated was 8 per cent and among the vaccinated 0.9 per cent; between one and two years of age, the mortality was 3.8 per cent among the non-vaccinated and no deaths occurred among the vaccinated group. Similar results have been obtained on adults by Scheel and Heimbeck at the Ullevaal Hospital at Oslo, especially among the tuberculin negative reactors who have become tuberculin positive following the parenteral vaccination with BCG, and subsequently intimately exposed to open tuberculosis on tuberculosis wards in the capacity of medical students and nurses. The most carefully conducted investigations of Wallgren at the Gothembourg Childrens' Hospital have clearly demonstrated the value of BCG as an immunizing agent against open tuberculous disease. Wallgren has conducted his studies on the basis that allergy is essentially a sign of immunity. The moment the child is born of a tuberculous mother, it is removed to a tuberculosis-free environment in the hospital where it is vaccinated subcutaneously with 0.05 mg. of BCG. As soon as the child becomes tuberculin positive, it is restored to its mother. Occasionally, revaccination is resorted to before allergy is established. The incidence of fatal tuberculosis among the vaccinated children is 1 per cent while it has reached 15 per cent among the non-vaccinated infants living with their tuberculous mothers.

The author has exposed rather lengthily the results obtained with the BCG vaccine because the statistics offered in favor of the BCG vaccination have been severely criticised in certain quarters. Although these results speak for themselves, it is the earnest desire of all the friends and pupils of Calmette that the statistical work should be further sharpened and that undue criticism should be delayed for a period of one or two decades before a final judgment is passed upon this most popular and apparently harmless method of preventing tuberculosis.

In token of the esteem with which the direction of the Institut Pasteur hold Calmette's enormous services to medical science and to tuberculosis in particular, it built him in 1931, at the cost of 8 million francs, the modern and spacious four story laboratory for research in tuberculosis and the preparation of the BCG vaccine. Thanks to this happy arrangement, the BCG vaccine is today prepared with a wellnigh perfect bacteriological technique in order to prevent its contamination. Simultaneously, this large laboratory offers numerous opportunities for French and foreign investigators to pursue their researches on tuberculosis in an atmosphere hallowed by the immense works accomplished by its founder who has given new hope and courage to a suffering humanity.

In his struggle against the "white plague" Calmette had suffered gross injustice from the mean jealousy of certain persons imbued with less noble ideals than those which possessed his keen intelligence, radiant personality and generous heart. The moral tortures inflicted upon him during the unfortunate and yet vindicating Lübeck process will never be fully known except to a small group of intimate friends who passed through this Gethsemane with their beloved *maître*. No doubt the man of genius suffers most of all for he alone can fully comprehend the frailties of inexpert human judgment. But Calmette died with his banner flying high and with full confidence in the ultimate victory for his method of BCG vaccination against tuberculosis, the malady that kills one among every seven or eight human beings. Although death surprised him during a very active period of research in his newly built laboratory, he was at least granted to end his earthly career as he had expressed the wish in one of his very best letters:

"J'espère qu'il me sera donné de travailler jusqu'à ce que mes yeux se ferment à la lumière et que je m'endormirai l'âme en paix, avec la conscience d'avoir fait ce que j'ai pu."

DR. WALTER BRASHEAR*

By ARTHUR CLAYTON McCARTY, M.D., F.A.C.P.

LOUISVILLE, KY.

LIKE the butterfly from the cocoon, some men seem to burst forth resplendent from humble beginnings and drab surroundings. Not so with Dr. Walter Brashear. He came "by" his greatness honestly, for ancestral characteristics and actions played an important role in his life. Love of liberty, the pioneer spirit, keen business ability, and a scientific penchant were bench marks of all the Brashears. Walter was the epitome of all these.

It is no mere figure of speech to state that royal blood coursed through the veins of Dr. Brashear. His line has been authentically traced[1] to the House of Brassier with origin in the province of Champagne in the XIV century. One branch of the house survives to date and is represented by the Marquis and Comte of Jocas, with chateau and lands in Avignon. Many of you may remember this charming province in the South of France by the "London Bridge" song which the French children and your children sing at home (Sur le pont, d'Avignon . . .). People of this section are described as reminding one of prosperous Fayette County, Kentucky, farmers, going into Lexington for Saturday afternoon—plain, simple folk, cultivated to the *n*th degree and so sure of their rank that there is a total absence of any sort of pretense, in other words "Lords of the Land." It was among such people that Walter Brashear chose to live in later years, in the Bluegrass region of Kentucky.

Avignon being the domicile of the Popes in France, it is natural to assume that this was the hot-spot of Catholicism and the place from which Protestants would emigrate to escape persecution. The Brashear family in America goes back 270 years through ten generations, having its origin in Colonial Maryland about the middle of the seventeenth century in the persons of Benois Brassier and Mary his wife. They, with Robert Brassier, a brother of Benois, had emigrated from France sometime in 1653, coming originally into Virginia as Huguenot refugees. There they encountered opposition and even persecutions from the already established English settlers, and in 1658 removed to the more tolerant colony of Maryland.

Ignacius (Nacy) Brashear, a soldier of the Revolutionary War, represented the fifth generation of the prolific Huguenot, Benois Brassier. Originally a farmer of Prince George County, Maryland, he moved with his wife and thirteen children to Kentucky in 1784. First stopping at Maysville, Kentucky, he soon joined his land-rich relatives near Floyds Fort of Salt River (the site of this house was on Brashear's Creek, and this land which has long since passed into other hands, lies near the present town of Shepherdsville, partly in Bullitt County and partly in Nelson County. Here, too, was a stockaded wooden fort in frontier style, called "Brashear's Fort"). The several members of the Brashear family owned and operated the Salt Works and 4000 acres between Shepherdsville and Bardstown. Daniel Boone was a neighbor and Governor Patrick Henry of Virginia a friend, while several first cousins of Walter Brashear helped to found and govern the nearby city of Louisville.

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* Read before the Innominate Society, Louisville, Ky., January 10, 1933.

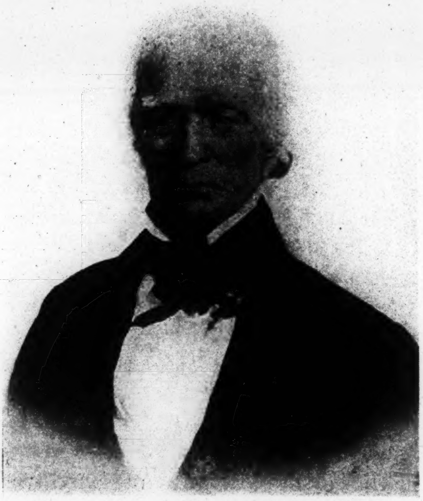
FIG. 1. WALTER BRASHEAR (1776–1860).

Thus, Walter Brashear, the subject of this paper, tenth child of "Nacy" Brashear, grew up amid strenuous pioneer surroundings. Truly a "war baby" (born in 1776 and dying in 1860) he was the February 11, "blessed event" in the Brashear Maryland home, arriving on the eve of the Revolutionary struggle. He came to Kentucky at the age of eight, predestined as a seventh son to become a physician.

Very little is known of his boyhood. William Henry Sparks[3] gives the most extensive account of the young Walter Brashear, whom he terms his intimate friend for long years. Several inaccuracies are apparent, however, which cast some doubt on the authenticity of the whole. Says he:

> After attending a common neighborhood school in the County of Fayette, near Lexington, one year, he found it necessary to find support in some employment. Walking the streets of Lexington in search of this, the breeze blew to his feet a fragment of newspaper which he picked up and read from curiosity. Here he found an advertisment inviting those who had ginseng for sale, to call. He knew there was plenty of this root to be found in portions of Kentucky, and determined immediately to embark in the speculation of searching for it and send it to Philadelphia. He labored assiduously, and soon had acquired a considerable amount of money for those times, 1801. He employed several hands to assist him the ensuing season, and after forwarding the root collected, found there was no longer any market for it in Philadelphia. Suspecting the person to whom he had previously sold was deceiving him, in order to drive a profitable bargain with him, he determined to go himself with the venture to China. This he did, and, making so handsome a business of it he returned and immediately went to work to procure a much larger amount for another venture. This he likewise accomplished, but was less fortunate than before, though he made some money. He was now twenty-one years of age, and had been twice to China, but had not contracted much love for commerce or voyaging upon the sea. He married soon after his return, read medicine and commenced the practice of it in Kentucky. Forming an intimacy with Mr. Clay, they soon became close friends, being nearly the same age and very like in character.

Much of this account is garbled, I feel sure. Better authorities[1,4,5] suggest that Walter spent an early youth of Indian fighting, fishing, hunting and chore-tending, and was encouraged to read medicine at home. Later he was sent to Transylvania University at Lexington, then the great literary institution of the Southwest.

Walter Brashear showed some craftiness and spirit of conquest early in life, as witness the following, recounted[4] by the physician of his brother, Robert Brashear:

> The doctor and his brother were boys that were not to be run over by every fellow that chanced to pass, and, in fact, were noted as fighters. In those good old times, the weapons that God gave men were about all that were used to settle personal difficulties, and it seems that Walter and Robert Brashear knew how to use them. On a certain occasion a bully happened to be in the Brashear neighborhood, and concluded he would go up and whip the two Brashear boys, and when he arrived he found Walter at the Salt Works by himself, and it did not take long for him to pick a quarrel with young Brashear. Brashear, however felt that the stranger had the best of him in size, and probably in the fistic art, but he determined to get the best of his antagonist and get the first lick, and the advantages also if they were to be had. There was a pond near by, and at a favorable moment when the stranger stepped near the pond, Robert sent out a right-hander and landed it under his ear, which sent him sprawling into the pond, and quicker than thought Brashear was on top of him, and in a short time the bully was crying for mercy.

Of his early medical experiences I now quote from the article[4] of Dr. M. F. Coomes, based on a lecture before the American Surgical Association (1890) by Dr. D. W. Yandell:

> Young Walter was eager for knowledge and we are told held a high rank as a Latin Scholar. After finishing his literary education, which was at the age of twenty, he began to read medicine under the tutelage of Dr. Frederick Ridgely of Lexington in 1796 and remained under his care for two years. At the end of this association, he rode on horseback to Philadelphia and attended upon a course of lectures at the University of Pennsylvania. At this time Barton, Physick and Rush illuminated the medical horizon of the East and were connected with the University of Pennsylvania; and no doubt but young Brashear was deeply impressed with the greatness of this trio of medical savants, for in these three was found all that goes to make up a great surgeon and doctor; and Brashear was certainly the personification of physician and surgeon, as his modest but remarkable career will show.

One year later, at the turn of the century, whether because of a restless, roving disposition or on business bent, Dr. Brashear shipped for China. Upon arrival in the East, he was persuaded to visit a high dignitary of the Flowery Kingdom (a note[6] says that this dignitary was the Emperor of China). His wife had a carcinoma of the breast and Dr. Brashear assured his celestial friend that he could remove the breast and it would result in relief or cure. The operation was completed and Dr. Brashear started to leave the palace when he was halted and told he could not depart for thirty days. The American did not comprehend this, but he was given to understand that if the patient died within the thirty-day period he would be beheaded. This was evidently a part of the program that had been kept back, but as there was no other alternative he proceeded to enjoy his captivity and is said to have spent a happy month at the expense of China. The patient did exceedingly well and Dr. Brashear took his leave, with the gratitude of his host ringing in his ears. Although this event took place more than a hundred years ago, the name and fame of Dr. Brashear is remembered in China today, I am informed by a traveler.

Returning to Lexington, Dr. Brashear married Miss Margaret Barr in 1802, and by her had seven children.

Walter Brashear did not rest long between epoch-making events. In 1806 he devised[7,8] a method by which amputation at the hip joint might be successfully done, and did it, eighteen years before the same operation was performed by Valentine Mott.[9] On a hot August day, without ice, without precedent to guide him, without anesthetic, and without trained assistance or adequate instruments this momentous deed was done. Again quoting Professor Yandell[4]:

> In 1806, the earliest and original successful surgical work of any magnitude done in Kentucky by one of her own sons, was an amputation at the hip joint. It proved to be the first of its kind not only in the United States but in the world. The undertaking was made necessary because of extensive fracture of the thigh with great laceration of the soft parts. The subject was a mulatto boy, seventeen years of age, a slave at St. Joseph's College; the time was August 1806; the place Bardstown; the surgeon Dr. Walter Brashear; the assistants Dr. Burr Harrison, and Dr. John Goodtell; the result a complete success. The operator divided his work into stages. The first consisted in amputating the thigh through its middle third in the usual way, and in tying all bleeding vessels. The second consisted of a long incision on the outside of the limb, exposing the remainder of the bone, which being freed from its muscular attachments was then disarticulated at its socket. Whether or not Brashear had ever heard or read a description of what had been accomplished in this direction by surgeons elsewhere the young Kentuckian was the first to amputate at the hip joint in America and the first to do the real thing in the world. Dr. Brashear seems to have set no high estimate of his achievement, and never published an account of the case.

Dr. Yandell further comments[10]:

> The technique of the operation as left by Brashear was incomplete in this, that it provided no trustworthy means for getting over its chief stumbling block, hemorrhage. It remained for another Southern Surgeon, Dr. John A. Wyeth, an Alabamian and a graduate of the University of Louisville, to set this stumbling block aside. As we have said in a previous issue, the name of Brashear and Wyeth must ever be associated in the history of this most brilliant and formidable operation.

I am informed[6] that the instruments which Dr. Brashear employed in this amputation are now possessed by the wife of a banker at Bardstown, Kentucky. Efforts to see these have been fruitless to date, but I expect to make a further attempt later on to view or borrow these tools.

In 1813 Dr. Brashear moved to Lexington where he soon became a leading physician and surgeon. An epidemic of pneumonia visited Lexington soon after his taking up his residence there and his treatment of the malady gave him additional fame. A little later he was offered the Chair of Surgery in the Academy of Science at Paris, France. His wife, who was exceedingly anxious to have him accept the position, was much surprised to hear him say that he would not think of considering it. Said he, "It is bad enough to live in Paris under any circumstances, much less occupying the position of a poor doctor."

Brashear was specially skilled in the treatment of diseases of the bones and joints, was successful in the management of fractures of the skull and in the operation of lithotomy.[11] He used the Dudley and McDowell technique for lithotomy, that is, the lateral incision and not the suprapubic.

In 1822, still pioneering, Walter

Brashear moved to St. Mary's Parish in the State of Louisiana (on the Gulf of Mexico), where he devoted himself to business rather than practicing his profession, and as a matter of course added nothing further to his surgical or medical fame. The practice he did was that among his neighbors and friends and without reward.

Concerning Brashear's Louisiana days, Sparks[3] contributes the following:

> After some years' residence in Kentucky as a physician, he determined on emigrating to Louisiana, and embarking in the business of sugar planting. Purchasing Belle Isle, an island off the coast of Attakapas, he removed his family there about 1824. He was successful in this new vocation; but not liking an island residence, where he was twenty miles from a neighbor, he purchased a residence upon Berwicks Bay, and a portion of Tiger Island, which was immediately opposite, and there made a new plantation, which is now the site of Brashear City. At this place he lies buried, by his children, all of whom, save one daughter, are there with him.
>
> For many years he was a member of the Legislature of the state of his adoption, an honest and efficient one, of fine abilities, and great will. He usually triumphed in what he undertook. His fine social qualities attached to him many friends. His devotion to them was unflinching, and he rather preferred to fight for these than play with any others. His courage was truly chivalrous, and he is remembered by all who knew him, and yet live, as the man who never felt the sensation of fear.
>
> An unfortunate difficulty with a neighbor, Dr. Tolls, brought on a personal rencontre. His antagonist was known to be brave and physically powerful; but in this affair, Brashear, after receiving a number of blows, wrested away his enemy's cane, and would soon have had the better of the fight, but persons interposing prevented it.
>
> "Doctor," said Brashear, "this is not the way for gentlemen to settle their difficulties. As soon as I can bind up my head, which you have battered pretty severely, I shall be in the street armed. If you are as brave a man as your friends claim you to be, you will meet me there prepared to fight me as a gentlemen."
>
> "In forty minutes from this time, if you please," said his enemy.
>
> At the appointed time and place they met, each with his friend and each armed; when they had approached within ten paces, Brashear stopped and said, "Are you ready"? Being answered in the affirmative, "Then fire, sir; I scorn to take the first fire." Dr. Tolls did so, and, missing him, stood and received Brashear's ball through both thighs and fell. There was no surgeon in town, and the wounds were bleeding profusely, when Brashear went to him and proposed to dress the wounds. Tolls stuttered badly, and replied, "I-I-I'll d-d-die first." "I can do no more," said Brashear, and bowing left the ground, granting Tolls his request.
>
> This chivalry of manner characterized him in everything. . . .
>
> Fond of amusement, he indulged himself in hunting and innocent sports, when and where he was always the life of the party. Energetic and restless in his nature, he could not bear confinement, and when a member of the Legislature, he was more frequently to be found walking rapidly to and fro in the lobby of the House than in his seat. To sit still and do nothing was impossible for him. A hundred anecdotes might be related of him, all illustrative of his lofty courage and daring, and his utter contempt of danger. A noble and generous frankness and liberal hospitality, his kindness to his slaves, and his generosity to the poor, endeared him to his neighbors, who live to feel that his void can never be filled.

Walter saw much of another relative, Peter Brashear, while in Louisiana. Peter's business necessitated much travel on flat boats up and down the Ohio and Mississippi from Louisville to New Orleans. The trip upstream was by the laborious process of "cordelling," requiring about six months for the journey.

During the winter of 1844, Henry Clay visited Brashear on his plantation in Louisiana. Quite a number of his friends and neighbors were present on the occasion, for the purpose of knowing the distinguished visitor at a dinner given by Dr. Brashear. Someone of the guests at the table proposed the health of Dr. Brashear: "The first and only physician of Louisiana who has successfully performed an amputation at the hip joint." Mr. Clay, who sat next to Dr. Brashear as the guest of honor, remarked, "Well, Doctor, he has got you on the hip." The good wit and humor of the remark made all the guests merry.

Dr. Brashear died October 23, 1860, at the age of eighty-four and is resting in the soil of his adopted state, Louisiana. He had not practiced medicine in the accepted sense of the practitioner for nearly forty years. He had attempted to make a fortune by abandoning his profession and engaging, first in politics, then in mercantile pursuits and in planting. He was outstandingly successfully in none of his undertakings outside of his profession. Brilliant as was his career, however, he left very little written word concerning himself and his work. He was never a teacher nor a writer and his many distinguished friends and contemporaries recorded little of his work and genius.

The last known direct descendant of Dr. Walter Brashear was his grandson, Walter, president of the Chess and Checker Club of New Orleans, who died a bachelor. Many relatives of this illustrious man remain in and about Louisville, however. Further connecting links are the Brashear house, estate and burial grounds at Shepherdsville, and "Wickland," at Bardstown, Kentucky.

Of all the illustrious Brashears, Dr. Walter was unquestionably the greatest. This may be said without fear of contradiction, the brilliance of the late Dr. Brashear, of Pittsburgh[12] notwithstanding. Better known as "Uncle John" Brashear, this eminent scientist, astronomer, and lens maker, by a peculiar coincidence was working as an engineer in Louisville (1859–61) at the time of Dr. Walter's death. I doubt not that much of "Uncle John's" international fame came from his ability to see a star in the inky Pittsburgh sky. Be that as it may, few if any stars in the medical firmament about Kentucky have shone more brilliantly than Dr. Walter Brashear.

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EUROPEAN ANATOMY BEFORE VESALIUS

By WILFRID TAYLOR DEMPSTER, SC.D.

ANN ARBOR, MICH.

PART I

A NUMBER of anatomical terms bearing the names of post-Vesalian anatomists may be recalled by anyone who has even a slight acquaintance with human dissection. Few, however, realize that a number of these names, such as *aqueduct of Sylvius*, *bundle of His*, *sinus of Valsalva*, *ventricles of Morgagni* and *Wharton's duct* are in reality misnomers which detract credit from the pre-Vesalians who were first to observe and to describe such structures.* Though obscured by the more extensive work of Vesalius and his successors, these men of the Middle Ages and early Renaissance had a significant history. In fact, the story of European anatomy during the five hundred years before Vesalius was that of transition from almost total ignorance to a fairly extensive literature. Such a transition was rendered possible through the importation of foreign anatomical works, the development of academic interests, the introduction of the practice of animal and human dissection and the spread of anatomy through the writings of Europeans. These things together with the development of printing and the practice of artistic anatomical illustration at the beginning of the scientific Renaissance furnished a background for the critical attitude of Vesalius and his contemporaries.

The backwardness of anatomy at the beginning of the Period was a phase of a generalized academic lethargy characterizing the Dark Ages. European civilization following the invasion and assimilation of vandal hordes from the north and east was in a stage of political uncertainty. New nations and new systems of economic and social adjustment had replaced the ordered systems of the Romans and in the resultant unsettled conditions, the heritage of cultured Rome was borne by the Church. Here the Latin language was preserved as a medium of cultured communication. The restrictions of religious authority and the dominantly idealistic church philosophy, however, led to suppression of scientific interests and direction of what activity there was to religious endeavors. Although physicians attended patients, administered drugs and awaited cures, academic and progressive medicine failed to develop. Almost no books were written; no advances in method were made; and what little remained of ancient medical scholarship was buried mostly in the Benedictine monastery libraries as unintelligible Greek manuscripts. Anatomy was virtually nonexistent. A few manuscripts illustrated by conventionalized diagrams of figures in semi-squatting poses on which were superimposed crude representations of the skeleton, muscles, nerves, arteries, veins or generative tract tended only to emphasize the lack of knowledge of the body during the later Dark Ages.

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*The men who were actually responsible for the early descriptions of one or more of these structures were Berengario da Carpi, Leonardo da Vinci and Achillini.

To the south of the Mediterranean and in Asia Minor, on the other hand, scholars through contact with the culture of Romanized Egypt had continued to study ancient science and medicine. The Graeco-Roman authors were copied, translated and studied, and with the subsequent advent of the Mohammedan religion (following 622 A.D.) and the expansion of Islam, ancient technical literature came to occupy a high position. This was particularly true of mathematical and alchemical studies which were advanced considerably by the Arabs during and following the eighth century. Natural science, however, was studied only sporadically, since Mohammedan religious dogma discouraged completely, particularly through dissection, the study of animals. In fact, the only animal dissections in Islam were done by non-Mohammedans. Ibn Masawaih (Mesué Major, died 857) is about the only dissector of whom we have any knowledge. The practice, we may infer correctly, was rare, but the medical knowledge of Greek and Roman writers, together with certain bits of Persian and Indian medical lore, was considered a valuable heritage. Although not accompanied by dissections, the anatomical portions of the works of ancient authors were studied and respected. Arabian authors glossed or commented on their foreign source books and several encyclopedic manuscripts were written. The manuscripts of such authors as al-Razi (died 923–924), Ishaq al-Isra'ili (died 932?), 'Ali Ibn 'Abbas (died 994), Abu-L-Quasim (died c. 1013) and Ibn Sina (died 1037)* contained anatomical sections. These were studied and were copied to such an extent that many manuscript editions were in use among the Arabians.

SALERNUM SCHOOL AND CONSTANTINE

In southern Italy, Sicily and in Spain, where the cultures of the east and the west were brought together, Arabian scientific and medical knowledge was gradually absorbed during the ninth to thirteenth centuries. In the Sicilian town of Salernum, a number of physicians had banded to form a school of medicine for the purpose of discussing medical matters and teaching students; Arabs, Jews and Christians were involved in these activities. The school reached its height during the eleventh and twelfth centuries. Most outstanding of the eleventh century Salernitans was Constantine the African (died 1087), a Benedictine monk who pursued his studies both in Salernum and in a monastery at Monte Casino, north of Naples. As a man of considerable linguistic ability, he devoted his energy to translating Arabian texts into Latin, with the result that over thirty Arabian works on medicine, some consisting of a dozen volumes of manuscript, were made available to Latin students. Certain texts of Galen (died 199) and Hippocrates (born 460 B.C.) together with those of Ishaq al-Isra'ili and 'Ali Ibn 'Abbas were the first foreign medical works available to Latins. Constantine's selection of works to be translated was a molding influence on the activities of medical men of Salernum. Of these translations the "Pantegni" (from the treatise "al-Maliki" of 'Ali Ibn 'Abbas) was of importance in the development of anatomy in Europe. This work, an encyclopedic summary of Galen, comprised twenty books of which two dealt with anatomy. In these, the tissues and organs of the body were described systematically with the subjects in order of treatment as follows: bones, cartilage, nerves, ligaments, veins, arteries, fat, membranes, skin, hair, nails, muscles, brain, eyes, throat, and internal organs. The descriptions which were transcribed from Galen without the check of either observation or experiment gave the main outline of classical anatomy. Except for the anatomical sections of the "Canon" of Ibn Sina this work of 'Ali Ibn 'Abbas was the most extensive work on anatomy from the time of Galen to the beginning of the sixteenth century.

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* These scholars are commonly known by their Latinized pen-names: Rhazes, Isaac Judaeus, Alı Abbas, Albucasis and Avicenna.

The translations of Constantine, prepared partly by his pupil Joannes Afflacius (died 1103), were accorded an enthusiastic response in Salernum. Manuscripts were copied, new books were written and a fairly extensive literature in Latin on numerous phases of medicine thus arose. Not only were the anatomical books of Constantine studied, but they came to be supplemented by demonstrations on animals.

EARLY ANATOMICAL MANUSCRIPTS FROM SALERNUM

Because of the belief that the pig was practically identical with the human in its internal structure, this animal became the principal subject for demonstration. Four or five twelfth century anatomical manuscripts of uncertain authorship, all showing the dominating influence of Constantine, have persisted to the present day. They were from one thousand to more than ten thousand words in length and were either straightforward notes on the dissections or systematic treatises outlining both function and structure. The former type of manuscript, of which there were two,* is known as the demonstration. They were introduced by a formal disquisition dealing in the scholastic manner with the humoral physiology and the classification of organs, and then attention being turned to the specimen, the incisions and the organs revealed by dissection were treated. Ordinarily, in the first demonstration, the organs were merely named and roughly located but not described. In the second demonstration, the character of the descriptions, which were in many cases practically copies of sections in Constantine's "Pantegni," may be inferred from a few typical sentences in which the dissector's attention is directed to the liver:

> . . . which is situated in the right hypochondrium and is shaped like a Greek *sigma*. On the upper side, where with its five lobes it is joined to the diaphragm, it is convex. If matter gathers here it causes dyspnoea and cough. . . . On that side on which it is attached to the stomach, it is concave, and, as we have said, its five lobes surrounded the stomach. Although the number of lobes varies in different animals, there are five in the pig, as I have recently shown you, and certainly the same number occur in man. Upon one of the larger lobes is the gall bladder. . . . †

The descriptions were short and simple and were by no means models of completeness or accuracy. The viewpoint was practical, however, and we find comments during the dissection on the more common sites of abscesses, tumors, or accumulations of fluid. The dissections treated in order, the throat, thoracic contents, abdominal organs and the cranium. It was believed implicitly that such porcine characteristics as a five-lobed liver, four-lobed right and three-lobed left lung and bicornuate uterus were likewise human characteristics. The humoral physiology, as understood from the imperfect translations of Galen and the Arabian writers, so beclouded the observation of the anatomist of this time that his ideas in many instances were confused and consequently errors in statement were frequent. Certain organs were emphasized and others were for the most part ignored. The absence of consideration of the muscular system, for example, might lead to the assumption that the eviscerated carcass had greater utilitarian value as pork than as dissecting material.

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* These are known as the first Salernitan demonstration attributed to Copho, and the second Salernitan demonstration, both written between 1100 and 1150.

† Quoted from Corner.[8]

SALERNITAN ANATOMICAL TREATISES AND HUMORAL PHYSIOLOGY

The systematic anatomical treatises of the Salernitans* indicated even more than the demonstrations the dominance of Galen's ideas, the immature state of anatomy and the speculative rather than probative interests of the writers. Such characteristics of Arabian theoretical anatomy as submission to authority, abstruse classification, and jejune attempts to explain why the various organs were formed as they are, were found here.

The normal maintenance of the body, it was believed, according to the humoral doctrine, depended upon an equilibrium within the body of substances known as animal spirit, vital spirit and natural spirit. The brain, which formed the animal spirit from the substance of sensation and stored it, was surrounded by protective structures such as the cranium, dura mater and pia mater and was drained of impure or harmful substances by the eyes, ears, nostrils or mouth. The animal spirit was distributed throughout the body by the nerves to cause motion and sensation. The heart, the site of the vital spirit, was surrounded by a protective capsule of pericardium. It rid itself of impurities through the lungs and trachea and distributed its vital spirit to the rest of the body through the arteries. The liver was the place of formation of the natural spirit. It was protected by peritoneum, the omentum and the thoracic cage, and was drained of harmful substances by the gall bladder, spleen, kidneys and ureters, and by the brain, heart and stomach. The natural spirit was transported to the various parts of the body by the veins.

Food and air formed the raw materials for the production of the various spirits. The superfluous materials were removed as phlegm, black bile, yellow bile or as urine. The processes of spirit formation, the expulsion of superfluous matter and the transport of the spirit were regulated or adjusted by innate or God-given forces. Heat, cold, dryness, and moisture were other forces which determined the activity of various organs. The generative system consisted of the testes which stored the sperm, the scrotum as the protective agent, the seminal ducts and penis as the expurgative organs, and certain organs of a vague nature, called didymi, which accumulated sperm from various parts of the body and brought it to the testes.

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* There were four of these, the "Anatomia Mauria" from the middle of the twelfth century, and the "Anatomia Ricorde," the "Anatomia Nicolai" and the "Anatomia Ursonis" from the end of the twelfth century.

The humoral physiology, based as it was on false premises, appears a confused muddle when viewed in the light of modern physiology. If, however, it is seen in relation to its origin, the humoral doctrine may be viewed sympathetically. When animals were opened and their parts observed, the Greek physicians (such as Empedocles and Hippocrates) noticed that arteries, veins and nerves were distributed to every region in the body. Dissection revealed the nerves arising from the brain and spinal cord, the arteries from the heart by way of the aorta and the veins apparently from the liver; those from the lower part of the body and from the abdominal viscera passed to the liver through the inferior vena cava and the portal vein respectively, while the superior caval system passed through the right atrium to the inferior vena cava and liver. The arteries and veins were obviously hollow and the nerves, because of other similarities, were likewise assumed to be hollow tubes. The three types of conduit and the major organs of the head, thorax and abdomen from which the vessels arose were to the ancients incontestably related. Presumably, the brain, heart and liver formed substances which were to be distributed to all parts of the body. The Greek habit of abstraction attributed to these substances subtle and evanescent qualities which resulted in a philosophical doctrine that, so far as the dead body indicated was self-sufficient. The characteristics of the humors, virtues and spirits were similar to those found in the four elements of the non-living world, namely: earth, air, fire and water, and thus there was no lack of harmony between the organic and the inorganic worlds. The humoral physiology formed, accordingly, a basis for understanding the intrinsic bodily reactions and the reactions of the individual to his environment, and it gave a rational explanation for pathological changes and their treatment. The experiments of Galen and the Alexandrians, as far as they went, were intelligible in the light of the humoral physiology and, accordingly, the traditional viewpoint was only strengthened. It remained as an inviolate principle until the incisive demonstrations of Harvey in the seventeenth century, to the extent that all anatomy in the Middle Ages and Renaissance was colored by it.

The twelfth century Salernitan texts, to which reference has been made, presented the anatomy against a background of these physiological notions. When an organ was considered, it was classified as either a principal, protective, expurgative or accessory organ of the animal, vital, natural or generative system. The color, hotness or dryness of an organ with the physiological implications was given as much attention as the form or structure. To account for form, in order to interpret the divine plan of the body, was one of the objects of the anatomist. For instance it was believed that the trachea . . .

> . . . is round because if it had angles it would retain waste matter and this would do harm. It is long and tubular in order that air may run freely to the spiritual ogans and that waste gathered there may be expelled.*

Again, the heart . . .

> . . . is shaped like a pine cone, pointed below and broad above, for the following reason: We know that fire tends to rise in the shape of a cone, because it is hot

* Quoted from Corner.[8]

and dry, and the same effect must take place in the heart and every fiery organ. It must be explained, however, that the apex of the heart is turned downward and therefore the broad part is above, because the heart receives its nutriment from the brain which is (so to speak) the root of all the organs. Just as a tree receives nourishment from the root below it, so do the heart and other organs receive nutriment from the parts above.*

The scholastic method of which the foregoing is an example was more concerned with the philosophical relationships of form and structure than with the structure itself. Abstruse theorizing was of greater interest than experiment or observation. The superficial interest in structure may be inferred from a passage in which an author terminated a very crude description:

> Enough has now been said about the more important and better-known veins, but there are also in the human body infinite numbers of veins which are unknown except to God alone, to whom nothing is unknown.*

During the thirteenth century, the activity of the Salernum school declined and anatomical endeavors were less promising. About 1225 A.D., however, an anatomy, "Anatomia Vivorum,"† somewhat more extensive than its predecesors, was written. This dissertation, showing the influence of the recently translated works of al-Razi, Ibn Sina, Galen and Aristotle, was much like the preceding works, but showed to a greater extent the speculative character of anatomy at this time. It was the most extensive and best anatomy of the school of Salernum. A few excerpts will give an idea of the method of writing and the content of the work. Relative to the heart we notice that:

> The heart is situated in the middle of the chest because conditions are more temperate there. It inclines a little toward the left side in order to leave more room for the liver, for it is better to give space to the liver than to the spleen because the liver is higher. . . . The heart is situated in the middle, in order that it may be equally near to all surrounding parts and may easily gather assistance from them, and that it may be everywhere surrounded by the organs which serve it. . . . God measured the capacity of the heart making it sufficient without excess or insufficiency, so that it should not be overweighted by too much blood nor break nor choke in its extremities because of too little contents. . . . Its movements cause movements in the arteries, its dilations causing them to dilate, its contractions causing them to constrict. (Some, however, say otherwise, referring to the action of bellows, but experience manifestly contradicts them.) To prove this, if you place one hand over the heart and the other upon an artery, you will observe depression of the heart to coincide with depression of the artery and elevation of the heart with elevation of the artery. . . . The advance of the vital heat begins at the fundus or small end of the heart where it originates, thence proceeding laterally and outwardly after the pattern of the heart.

In another place the text referred to the lung, which . . .

> . . . is covered by a nervous membrane which provides it with sensation on the surface, as was foreordained. The lung itself is spread beneath the heart, sustaining and lifting it. It is hollowed out on the dorsal side and is doubled there in order to fit into the hollows on each

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* Quoted from Corner.[8]

† Attributed with some uncertainty to the Englishman, Richard of Wendover (died 1252).

> side of the spine. It is also hollowed in front in order to embrace the heart more easily. . . . The lung is of large size to provide a quantity of air which will suffice for several pulsations of the heart; for if because of smallness of the lung the number of inspirations was equal to the number of heartbeats, then of necessity several very important properties of the lung would cease to exist, for instance, the prolonged emission of sound which is required in sermons, in addresses, and in singing; the breath could not be held in the presence of stinking or putrifying things, nor at the moment of swallowing.

Again:

> The liver is hollowed on one side, bulging on the other, and is located under the diaphragm and mostly on the right side. It is hollow in order to receive the stomach in its concavity. It has many processes, some small and others large, which embrace the stomach like the fingers of a hand. (Members of good holding capacity must be like the palm of the hand.) . . . God made the liver to be the source of the blood and the origin of the veins. However, on this point, Aristotle dissents from Galen, for Aristotle believes that the heart is the origin of the veins. . . . Galen says that it comes from the liver. . . . On this point Avicenna remarks that there is nothing against the blood taking origin from the liver, although the heart is fleshy and the veins are fibrous, for coral is found growing in the mud. It can also be said that both the heart and the liver are sources of the blood, but that the heart is the first and mediate source, furnishing the heat of the blood, and the liver is the immediate and proximate source.*

TRADITIONAL EUROPEAN ANATOMY

While the Salernitan physicians were reading eagerly the works of Constantine and his successors and were trying to digest the essentials of Arabian anatomy with the aid of quadruped dissection, other Europeans were limited to those vestiges of anatomical knowledge that had filtered into Europe in ancient times. It is true that the works of certain of the older Greek medical writers were to be found in occasional monastery libraries but it seems unlikely that these Greek texts were touched during the Dark Ages; instead, anatomical knowledge was transmitted by short, usually illustrated, manuscripts which revealed no direct acquaintance with ancient anatomy. The occasional medical writings of the Dark Ages and early Middle Ages fall into two groups, those written in the vernacular and those in Latin. The manuscripts of Teutonic and Anglo-Saxon origin treated of herbs, potions and the treatment of disease, and wholly ignored anatomy; the Latin works of the eighth to twelfth centuries, on the other hand, occasionally referred to anatomical matters. These presented a rudimentary and conventionalized anatomy, the stereotyped character of which was shown prominently in the monotonous uniformity of the illustrations which were of four distinct types: zodiac figures, diagrams giving the places for venesection, figures of the positions of the fetus in the gravid uterus, or a collection of sketches which purported to survey, in five (or six) figures, the essentials of body structure. These figures accompanied by a text have been found sometimes almost identically duplicated in manuscripts written several centuries apart. The unchanging character of the texts, their number and their widespread distribution together with the inclusion of details of Greek, Egyptian and Hindoo origin and the absence of Arabian influence stamp these works as the traditionalized residue of a classical anatomy possibly from the Alexandrian school. This had been handed down from generation to generation as a traditional summary of the various organs of the body.

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* Quoted fromCorner.[8]

The five figure series, which was of most importance, depicted in a series of five diagrams, the arteries, the veins, the bones, the muscles and tendons, the nerves, and sometimes in a sixth diagram the generative tract. Each diagram was super-imposed upon an outline of a human figure in a peculiar semi-squatting pose. This posture occurs so frequently that it must be considered as a standardized posture in their descriptions. The drawings were so crude that the barest fundamentals of bodily structure were confused and such characters as the shape, position or size of organs were utterly ignored. The liver, for instance, was represented by a mere outline showing from three to five lappets representing lobes while the spleen was pictured in the outline of a sole of a slipper. In fact, the sketches were little more than memoranda upon which anatomical labels could be placed in some topographical relation to one another. Certainly they showed no evidence of the practice of dissection. The texts accompanying the figures were sometimes slightly different from one another, but a typical example may be taken from a manuscript which was written about the time of the Salernitan anatomical writers (1158). This text refers to Galen but shows no direct familiarity with his works. A representative section of the text is as follows:

These are the accounts of the parts of the body in the sequence according to which their creator and fashioner drew them up and divided them. Both flesh and sinews hold each other together and the beginning of these is the bone of the base of the skull and its configuration is round. Beneath this the brain resides and through this bone the cord passes through into the vertebrae of the back of the neck and they are bound together with it in turn and with the chin-bone and from this same there come forth tears and the muscles of them are called *gaudium* and inside there are very small bones after the fashion of sesame seed. The nose extends from the beginning of a bone which is in between the eyes and it is of cartilage. The cheeks with the jaw bones and their adjuncts are connected with the bone of the root of the ears and are called *seuta* and in them are teeth and the number of these is 32. And again, the bones of the throat are vertebrae and there is there another bone which sweats. . . . And again, the bones of the eyes (?) are placed face to face and they are seven and from them come ribs. The ribs, moreover, of the right side are complete and on the left side there is one less rib in the male; in the female they are complete. And there are other accounts.*

Blood vessels, nerves and muscles were treated in an equally sketchy and garbled fashion. It is obvious that very little of classical anatomy had persisted to the time of the writer of the manuscript. The Latin manuscripts up to and after the twelfth century were on the whole unsigned. There were, however, in the mystical writings of Hugo de Sancto Victore (died 1141) summaries of medical interest which included two short chapters on anatomy. These chapters, which were slightly shorter than the Salernitan treatises, dealt chiefly with the superficial aspects of the body. The head, neck, shoulders, arms, trunk, genitalia, thighs and legs were in turn considered. The superficial treatment is evident from a few lines relating to the upper extremity. A play on words is a notable feature of the text.

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* Translated from Sudhoff's text[50] (with the assistance of Dr. W. E. Blake, Professor of Greek, Univ. of Michigan).

> . . . The hand (*manus*) is so-called because it is a protector (*munus*) to the whole body, for it furnishes food to the mouth, it manages and directs everything itself, through it we give and receive. . . . The right hand (*dextra*) is so-called from giving for it is given (*datur*) in token of peace and is held as evidence of faith and safety. . . . The left hand (*laeva*) is so-called because it is smooth (*laevis*), it is without the roughness and hardness which is brought to the right hand by labor. . . . The palm is the hand with extended fingers as it is the fist with them doubled up. The fist (*pugnus*) is so-called from punching (*pugendo*) or from fight (*pugna*), or the contrary just as the palm (*palma*) is from stretching out (*pandendo*). The digits are so-called because they are ten (*decem*), or because they are decently (*decenter*) joined together for they have in themselves both the perfect number and proper order. Whence the first is called thumb (*pollex*) because it is strong (*polleat*) in virtue and power among the others. The second is the index, greeting finger or demonstrator because for the most part we salute with it or point out or show with it. The third is the finger of shame (*impudicus*) because* through it the greater contempt is manifest and the anus is wiped with it and it is the middle finger. The fourth is the ring finger (*annularis*) because on it a ring (*annulus*) is worn. Likewise it is called the medicinal finger because eye salves are smeared with it by physicians or because the pulse of invalids is felt with it. The fifth is the ear finger (*auricularis*) because we scratch and wipe out the ear with it.

Certain internal organs of the abdominal and thoracic cavities were outlined in equally sketchy fashion, for instance:

> The intestines (*intestina*) were so-named because they were contained in the internal (*interiori*) part of the body where they are arranged by long connections in a circular manner in order that they digest the retained food a little at a time and they may not be blocked by superadded food. The omentum is a membrane which holds together the major part of the intestines which the Greeks called *epitolin*. . . . The blind intestine which is without opening or exit which the Greeks call *tisonenteron*. The slender empty (*jejunum*) intestine from whence it is called "fasting" (*jejunum*). The belly, however, and intestines and uterus differ among themselves. The belly is that which digests the food received and is visible externally and extends from the chest to the groin. It is called the belly (*venter*) because throughout the whole body it supplies life (*vitae*). . . . The bowel is that which receives food and is accustomed to be purged by excretions. For the filth of dung flows from it. Women alone have the uterus in which they conceive after the fashion of a small cabbage stalk; some authors, however, use the word uterus in place of belly for either sex. It is called uterus because it is double and from each side divides itself into two parts which spread out in opposite directions and here its forks are folded around in the form of a ram's horn, or it is filled with the foetus within.*

The concluding paragraphs related to fecundation, menstruation and the fetus. No authorities of technical importance were quoted and it is clear that traditional doctrines which had persisted from Greek and Roman times were the sources of information. Ancient functional views such as those on the nature of insemination were roughly outlined and occasional anatomical comments on viscera can be related in a vague way to quadruped characteristics.

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* Since the hand with the third finger extended and the other fingers flexed was regarded as a symbolic representation of the male genitalia.

* Translated from Migne[21] (assisted by Prof. Blake).

By the middle of the twelfth century Constantine's translations were known outside of Italy. A catalogue of the books in the library of Bishop Bruno von Hildesheim dated 1160 referred to Constantine's works and is an early evidence of the spread of Salernitan influence on European medicine.

Tracts of the five picture series after this time incorporated knowledge from the more recent authors so that in the thirteenth century, as the Salernitan writings and the translations from the Arabic became familiar, modifications appeared in the series. Considerable changes were introduced until in the sixteenth century the works lost much of their individuality and were negligible factors in European anatomy. The five figure series which had spread into the far east as it had in Europe was to a much later period a factor of importance in Asiatic anatomy.

If the traditional method of depicting anatomy were affected by the introduction of features from the Salernitan, Greek and Arabian writings, the effect of the traditional representations on anatomy in medieval Europe was equally great. The method of representation was so old and so bound by tradition that it became the natural way of graphically demonstrating structure. The semi-squatting figures and the method of depicting a whole organ system in a single drawing affected anatomical illustration to the extent that such later anatomists as de Mondeville, Peyligk, Hundt, Leonardo da Vinci and even Vesalius were not free from its influence. Much of the progress of medieval anatomy was the consolidation of traditional anatomy with the Graeco-Arabic, but this was a long process that involved extensive translations of older works, the study of the newly translated texts, the beginnings of human dissection and the recognition of the practical importance of anatomical knowledge to surgery.

TRANSLATORS, SCHOLASTICS AND THE UNIVERSITIES

During the twelfth and thirteenth centuries many men, among them Stephen of Antioch (fl. c.1127), Gerhard of Cremona (died 1187), Alfred of Sareshel (c.1200) and Faraj Ben Salim (c.1271) devoted themselves to translating Arabian works into Latin. Through the work of these translators, Arabized texts of Hippocrates, Aristotle, Galen, Paulus Aegenita (died c.640) and the distinctly Moslem writings of al-Razi, Abu-L-Quasim, Ibn Sina, and Hunain Ibn Ishaq (died 877) became available to European scholars and physicians. A number of newer translations into Latin were derived also from original Greek manuscripts. The translations stimulated men to the extent that the study of translations became a predominant intellectual activity of the thirteenth century. Many treatises were written by such men as Alexander of Hales (died 1245), St. Thomas Aquinas (died 1274), Albertus Magnus (died

1280), Roger Bacon (died 1294), Arnold of Villanova (died 1311) and Peter of Abano (died 1317), and in these works the emphasis was placed upon extracting salient parts from older authors, reconciling contradictory viewpoints, or rearranging and systematizing the knowledge of antiquity. A number of manuscripts of the teachers and commentators of this period was printed later and their effect was felt directly for three or four centuries after their time. The importance of the translations of the twelfth century becomes apparent when we realize that the texts represented nearly as extensive a cross-section of classical and Arabian medicine as was ever to be obtained.

The recipients of this literature formed an important factor in the development of European thought; they were known as the scholastics. The translators literally dumped the bulk of the mature and considered knowledge of the Greek, Jew and Arab upon an unprepared but eager Europe; it was the energy of the scholastics which classified, weighed and speculated upon the knowledge so suddenly released. Much of the opinion, to be sure, was sterile and pedantic; but it may be recalled that we find this same jejune speculation today when primitive people are confronted with the wonders of our own mechanized age. Even so, here and there seeds of knowledge germinated to develop later into modern philosophical viewpoints and the experimental method. The study of the newly imported learning became the prominent activity in the universities which had acquired prestige as centers of European culture about the time that the translators at Toledo and elsewhere flourished.

The origins of these institutions are obscure but it seems likely that their predecessors arose in connection with the church or with Benedictine monasteries. Young people gathered at such places and were taught by the priests or monks. After a considerable period, these schools developed a bias toward one field of learning or another: theology, law, philosophy, cultural studies or medicine. After long periods, established curricula, regular faculties and accumulated traditions led to the acceptance of the schools as institutions with which to be reckoned. During the thirteenth century the universities, some of which had originated a century or more before, were officially recognized. Emperors and popes vied with one another in granting them charters. Montpellier, Bologna, Naples, Padua and Paris were among the earliest universities and these were in turn followed by the institutions at Oxford, Cambridge, Perugia, Pisa, Pavia, Seville, Prague, Vienna, Cracow and many others. Although plagues and distressing economic conditions in the fifteenth century interfered markedly with the development of many universities, by the end of the century most of the now famous European schools had been established and a number had regular medical faculties. Universities, in fact, were founded in America in the early part of the sixteenth century at Lima and at Mexico City.

By the thirteenth century, a number of the universities attained prominence in the field of medicine and the university as an institution has remained to the present time as a center of medical progress. At this time, however, medical teaching was practically limited to the reading and memorizing of Latinized versions of antique and Arabian medicine. What little dissection there was, moreover, applied to the lower animals rather than to the human.

EARLY HUMAN DISSECTIONS

Throughout the ages, superstitious fear or feeling of respect for the dead has impeded anatomical knowledge. In both Christian and Mohammedan countries, tradition or restriction opposed for centuries the anatomizing of human corpses, and we trace an obscure history in following the change in attitude toward dissection during the thirteenth and succeeding centuries. In the thirteenth century dissection was a very rare occurrence; in the following two centuries it became widespread territorially but, with few exceptions, was infrequent.

During the Crusades (eleventh to thirteenth centuries) and later, there developed a practice of boiling and macerating bodies of men who died at considerable distances from home so that the bones could be transported to their native land. Although this practice was discouraged by a papal bull in 1300, such familiarity with dead bodies may have changed the attitude of many people toward corpses. Occasionally physicians opened dead bodies during periods of plague in an attempt to learn the cause of the disease.

Records of medico-legal dissections for the purpose of determining whether or not death was caused by poison indicated at least that post-mortems were sometimes made. William of Saliceto (died c.1280), a surgeon of Bologna, is said to have performed an autopsy of this sort. It is not unreasonable to surmise that a surgeon may have extended the dissection in the hope of verifying statements mentioned in his books.

At the medical schools dissections on animals were occasionally supplemented with studies on the human. At Salernum during its later period students were encouraged to study anatomy, and Frederick II, in fact, issued an order in 1240 requiring that a medical man must have learned the anatomy of the human body at the medical school before he could become a surgeon. Early in the fourteenth century, Mondino, de Mondeville, Bertrucce and others we shall take up later dissected cadavers. Occasionally the desecration of graves has been recorded though legal permission for acquiring material was sporadically provided. Annual dissections for physicians and surgeons were scheduled at Montpellier in 1340, at Venice beginning in 1368, at the University of Lerida in 1391, at Vienna in 1404 and at Paris in 1478. After 1442, a male and a female cadaver were provided annually by the city for the University of Bologna, and permission to dissect criminals was granted the faculty of Tubingen in 1482. Cadavers were available for dissection during the fifteenth century at Pisa, Padua, Ferrara, Vienna and Prague. Sometimes, however, the authorities of a medical school were forced to petition negligent authorities even where the dissection of bodies was authorized in order to get dissecting material. At Montpellier royal sanction was sought in 1376, 1377, 1396 and again several times during the fifteenth century in order that the privilege be obtained.

The attitude of the church toward dissection during the Middle Ages is a subject of which little is known. There are indications in the anatomical literature of the time that the practice was not ignored by ecclesiastical authorities, though there are no church records which substantiate this view. In a section of Mondino's anatomy devoted to the temporal bone and ear, the author mentioned the difficulties in studying the region, "unless the bones are *cooked* but I have been accustomed to dismiss them on account of *this sin*." Again, in a later section of de Mondeville's surgery devoted to the methods of preserving and conserving dead bodies, which were used by surgeons rather than by undertakers, one finds this statement: "If the dead body is to be conserved more than four nights and *where one has a special privilege from the Roman church*, one incises the anterior wall of the abdomen from the middle of the thorax to the pubis. . . . " Furthermore Guido de Vigevano began his anatomy with "*Because it was not permitted by the church to make dissections of the human body* and since the art of medicine cannot be known completely unless someone before has known anatomy. . . . " These remarks by practicing anatomists surely suggest restrictions, though the only papal statement regarding the handling of dead bodies was that of Boniface VIII dealing with the mutilation of corpses for transport and expatriate burial. This bull is quite definite in its wording and could not easily be misinterpreted to apply to medical dissections. Since the authors quoted all wrote shortly after the publication of the bull in 1300, it seems highly probable that the misinterpretation of this papal message by lesser ecclesiastical authorities was an actual deterrent to anatomical practice. This seems at variance with the position of the high church dignitaries. For some of the popes were well schooled in the thought of the time and before their ordination into the papacy made real contributions to knowledge. John XXI had actually been a medical man before his ordination (1276) and many of the leading intellectual leaders were officers of the church. It seems likely that the lack of prohibitions by the high church authorities may have been indicative of tolerance.

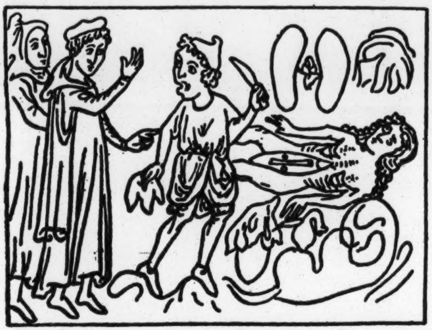

Fig. 1. Earliest Known Dissection Scene from an Early Fourteenth Century Manuscript (ms. Ashmole 399) in Bodleian Library at Oxford. It Portrays the Dissection of the Abdominal Cavity of a Female Body. A Layman Operator Is Removing Visceral Organs at the Request of a Physician, While a Monk Looks On. (From Singer.[48])

Dissections, infrequent as they were and dealing with but one cadaver at a time, were performed in numerous universities in Europe. Due to the fact that preservatives were lacking and owing to the unstable nature of the material, dissections were of necessity hurried, causing them to be extensive rather than intensive in scope. In addition to direct dissecting, some structures were studied following a period of desiccation in the sun* or after maceration. Bones were sometimes cleaned through exposure, burial or by boiling.

* Mondino in his anatomy referred to specimens of the extremities which had been exposed to the sun for as long as three years.

(*To Be Concluded*)

HISTORY OF MEDICAL EDUCATION IN NEW ORLEANS

FROM ITS BIRTH TO THE CIVIL WAR

By A. E. FOSSIER, M.D.

NEW ORLEANS, LA.

PART I

MEDICAL COLLEGE OF LOUISIANA

ALTHOUGH in the early period of the nineteenth century New Orleans was rapidly increasing in population and growing in commercial importance, and although it possessed a great hospital with unlimited clinical facilities, and prided itself on the learning, culture and distinction of a large number of its physicians, it was not until the year 1834 that the Medical College of Louisiana was organized. This was the first medical school in the Southwest.

During the summer of that year a few English-speaking doctors of this city, realizing the need for a school of medicine in this section of the Union, decided on its establishment. The first mention of their intention was made in one of the dailies of the time, the *Bee* of September 29, 1834, which made the following editorial comment:

> We are highly gratified to notice the establishment in this city of a medical college. The gentlemen who fill the chairs of professorship are men of skill and experience, and we hope that we may not be thought invidious, when we point out to Messrs. Hunt, Ingalls and Luzenberg, with whom our acquaintance is extended: The former two have been officiating in a like capacity in similar institutions, and the latter has established a reputation of the highest degree as a surgeon.

In the same issue of that journal the prospectus of the Medical College of Louisiana was published in the French and English languages. It read as follows:

> MEDICAL COLLEGE OF LOUISIANA PROSPECTUS
>
> Health is a primary and essential source of human happiness. It increases population; it cheers and sustains industry; it gives birth and vigor to enterprise; it confers the power and infuses the spirit to prosecute study, and in short, with the qualities that usually attend it, it bestows on Society whatever is connected with its highest interests, and whatever is necessary to the enjoyments of the comforts and refinements of life.
>
> Impressed in a good degree with the truth, the great and good men of antiquity were wont admiringly to style medicine "a divine art," and to hold its professors in the highest estimation as public benefactors. Nor has time detracted from the consequence of the profession, or diminished the honors justly due to its skillful and scientific practice. Indeed the influence of the science of medicine is now universally felt and acknowledged by the civilized nations of the earth, and attention is paid everywhere under public authority, in proportion to the progress which each society has made in civilization, to whatever is calculated to promote and preserve the public health. In this enlightened country particularly, we are happy and proud to say that public anxiety has manifested itself to a considerable extent for the diffusion of medical knowledge and that liberal appropriations have been made by several of the State Legislatures for the establish-

ment and support of Medical Schools and Colleges.

But it cannot be denied that these schools and colleges, however, creditable to us considering their youth, are not yet, in consequence of the rapid growth of our population and vast extent of territory over which that population is spread, sufficient to answer the growing wants of the country, and accordingly we every day find prospectuses issuing in various directions, in the name of honorable physicians ambitious to distinguish themselves in the public service as teachers, inviting students of medicine to attend lectures at designated places considered as affording facilities and opportunities for the acquisition of medical knowledge. Of these Prospectuses this is avowedly one.

The undersigned practitioners in New Orleans convinced of the want of scientific medical knowledge in this State and in several of the adjoining States, and of the non-existence of schools necessary for the diffusion of that knowledge, and aware too that an acquaintance with the peculiar diseases which prevail in this part of the Union, cannot be made in Cincinnati and Philadelphia, but must be obtained by the students at the bedside of the patient, and anxious to advance the cause of science; and to disseminate rational principles so as to remove or alleviate human sufferings and to put an end to the murderous practice of the empirical arts of selfish speculators on the ignorance of vulgar credulity, and thereby to increase the happiness and prosperity of the country, have associated themselves together as a Faculty for the purpose of delivering Medical Lectures in the city, under the name and style of the Medical College of Louisiana.

The establishment of this school in the City of New Orleans, it is sufficiently obvious, must prove of the greatest benefit to the States of the Southwest generally. It will tend to excite professional emulation, to diffuse knowledge, to expose ignorance, and to eradicate or arrest under scientific treatment, the diseases of which thousands are now victims.

Nor will its effects end here. By removing the danger of death and the apprehension of disease, it will cause population to increase, agriculture to yield additional profits, trade and commerce to flourish and the arts and science to advance rapidly among us. In short, its operation will be to improve our national extraordinary advantages, to remove the obstacles in the path of our prosperity, and under proper exertions put New Orleans in a short time on an equal footing in medical knowledge with New York and Philadelphia.

In selecting New Orleans as a place for the location of their school, the undersigned have been governed by the following among other reasons:

1st. Because it is the largest and most populous town in the Southwest, and the most accessible to Students.

2nd. Because its hospitals, which will be opened to the undersigned for the purpose of instruction, are the largest in the Southern and Western States, so that Practical Medicine and Surgery can be taught at the bedside of the patient, the only place for this study.

3rd. Because the study of anatomy can be prosecuted with more advantages and at a cheaper rate here than in any other city of the United States.

4th. Because New Orleans is so healthy during eight months in the year, that students can remain in it and study the different types of diseases at different seasons.

5th. Because it is a Commercial town, and more surgical accidents occur to seamen than to any other class of individuals, and it is consequently the best field for the study of Surgery in the Southwest.

6th. Because in consequence of its great population, its Hospitals are filled with patients, and

7th. Because as the undersigned pledge themselves Students can get board at $25.00 per month.

The undersigned feel assured that these reasons will have their due weight with the Public, and at the risk of being charged with a little repetition will add the following remarks:

A Home Institution has already been too long wanted among us. The expense attending the acquisition of knowledge in schools at a distance from us has heretofore closed the door of science against the poor student and has caused this part of the country to be overrun with Quack Doctors, to the destruction of human life. An institution like that we are about to establish, which will bring knowledge to our doors, impart instruction at the cheapest possible rate, and afford the opportunities of medical education to all who may feel inclined to avail themselves of them must lead to the advancement of Science and the rational treatment of disease by regular bred Physicians, and cannot fail, in whatever point of view it is considered, to obtain the good wishes of every philanthropist and friend of science. Besides, to the student of Medicine in the Southwest it will recommend itself by this unanswerable reason for a preference over any similar institution at a distance; it will enable him to study diseases and their treatment in the climate in which he intends to practice, and will supply him with that information which is necessary to his successful practice, and which he could not obtain except at home.

The undersigned respectfully invite the attention of the Students of Medicine in the Southwest, to the above observations, the confidence of success, announce, that

THE LECTURERS OF THE
MEDICAL COLLEGE OF LOUISIANA

will commence on the first Monday of January, 1835, and will continue for four months from that day.

Thomas Hunt, M.D. Professor of Anatomy and Physiology

John Harrison, M.D. Adjunct.

Chas. A. Luzenberg, M.D. Professor of the Principles and Practice of Surgery.

J. Monroe Mackie, M.D. Secretary. Professor of the Theory and Practice of Medicine.

Thomas R. Ingalls, M.D. Professor of Chemistry and Pharmacy.

Edwin B. Smith, M.D. Professor of Materia Medica.

Augustus H. Cenas, M.D. Professor of Obstetrics and Diseases of Women and Children.

Demonstrations in Practical Anatomy will be given daily by the Adjunct Professor of Anatomy and Physiology.

Chemical Lectures will be delivered twice a week at the Charity Hospital. The Hospital will be open every day for the attendance of the Students.

Thomas Hunt, M.D.
Dean of the Faculty.
Sept. 29

New Orleans, September 25, 1834.

This unexpected announcement was the cause of quite a furore in the city. It was the principal topic of conversation. It provoked acrimonious discussions not only among members of the medical profession, but among the educated public as well. The necessity for the *modus procedendi* for the formation of the new school, as well as the personality and the qualifications of the members of the faculty were the subjects of controversies in the home, in the streets, in the exchanges, in the coffee-houses, and in the newspapers.

The announcement of the faculty composed practically of English-speaking physicians, a few of whom had only recently arrived in the city, incited the expression of acrimonious opinions. Communications from polemics appeared in the press. Unfortunately the identity of these letter writers is lost to us today, because it was the custom of that time for all letters from the public published in the newspapers to be signed with a *non de plume*. Strenuous objections were voiced against the establishment of the College without first procuring the sanction of the Legislature or the authorization of Congress. It was also evident that the idea of "self-appointed professors" was distasteful to many members of the local profession. The very youth of many of the organizers of the College was a subject of rancorous discussions.*

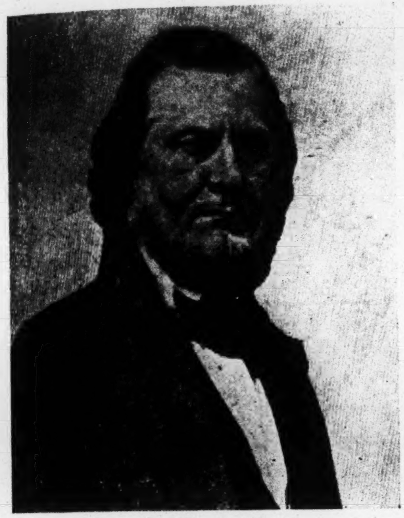

FIG. 1. DR. THOMAS HUNT.

The following communications which appeared in the contemporary newspapers are of the greatest historical importance because they voiced the strong opposition by many of the physicians of this city to the establishment of that institution. The first one of these documents was signed "An American Physician" and was published in the French section of the *Bee* of October 3, 1834. It read as follows:

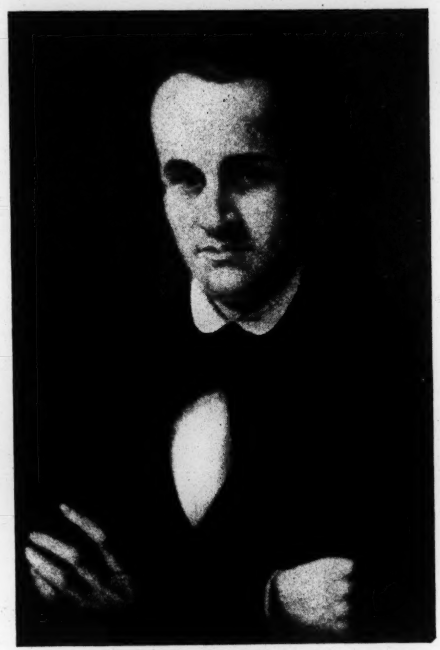

FIG. 2. DR. JOHN HARRISON.

Yesterday whilst I was reading your gazette, I noticed the announcement of the establishment of a medical college in New Orleans. I was delighted, because I thought that Congress had legally created a college, which would be so useful to the city, and also, that Louisiana, so happily situated for the study of the diverse branches of the art of healing, would acquire a regular school from which would emanate distinguished physicians, capable of imparting to our profession its well deserved lustre, and to those who practice their profession, the amount of consideration, of which they are deprived of a large portion by the numerous charlatans, who have shamefully arrogated to themselves, to the great shame of our tribunals, the right to practice medicine, either by the usurpation of titles that they at no time possessed, or by making a vile trade of the noblest of professions.

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* Hunt, Harrison, Luzenberg, and Mackie were then twenty-six years old.

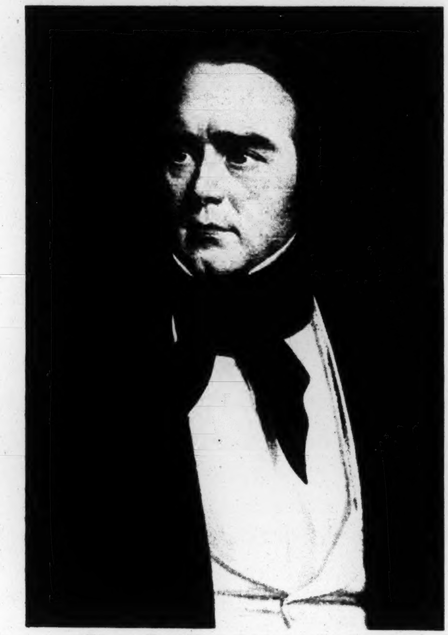

Fig. 3. Dr. Charles A. Luzenberg.

I was greatly surprised to notice that the college was organized without legal authorization: In England, in Germany, in France, and in fact in every civilized country, a school of medicine cannot be established without legal authority. The professors are appointed only by the Government or by an university. The aspirant for a chair must be at least a doctor of medicine in one of the principal faculties of the country. If we acknowledge that this is as it should be, and recognize the fact that this concerns the most difficult science in the world, the one to restore health, the one which is of the greatest interest to all citizens, it is, therefore, of the utmost importance that only the most learned professors be chosen.

God is my witness, that it is not my intention to even insinuate that the honorable gentlemen who have signed the prospectus are not in the above mentioned category, but this is not alone sufficient, because, no matter what may be the extent of their education, they do not have the right to appoint themselves to these all important professorships! These chairs should be allotted only after a competitive examination conducted before one of the leading faculties of the Union, or to physicians who have already graduated from one of these faculties, or from one of the principal universities of Europe. The professors should be at least thirty years of age. These professorships should demand as much experience as knowledge. Do the signatories of the prospectus combine all these essential requisites, or even a majority of them? Without a shadow of a doubt, NO! How, then, can they possibly teach in a Medical College?

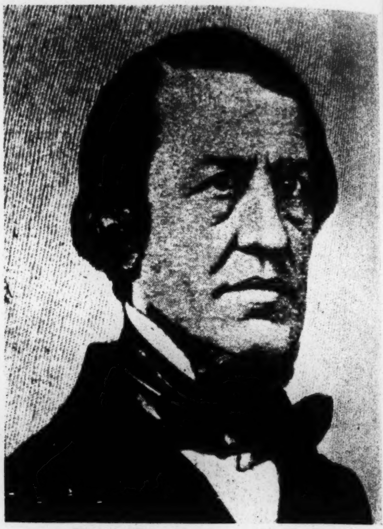

Fig. 4. Dr. Augustus H. Cenas.

I do not know to what extent liberty may be stretched in the United States. But I do not think that a medical school may be legally organized in the manner proposed by our honorable confrères. The future alone can determine this question.

I do not know whether any invitations were extended by the organizers of the new college to a Creole or European born physician who practices their profession here, to join them in their enterprise. If they have not done so, they should have, and I am certain that the one to whom an invitation should have been extended, would have proved to the signers of this prospectus that a medical school should not be instituted *ad libitum*.

There is still much more to be said on the subject, Mr. Editor, but as this is only intended to be a communication for your journal, space is necessarily limited. With your kind permission, I reserve to myself the privilege of writing again if the occasion should present itself.

(signed) An American Physician.[*]

The opinion of "An American Physician" was evidently not shared by the Editor of the French section of the *Bee* for in the following issue, he editorially commented that "those who had the idea of founding here a medical college have undisputed rights to the gratitude of their fellow citizens in general, and also especially to the the esteem of men fully capable of appreciating a similar benefaction." He further asserted that there was not a country in the world where greater precautions had to be taken to conserve health, and that nowhere else less attention was paid to that serious problem. The public always hesitated before calling in a physician. And very frequently the disease had progressed considerably before it was decided to call in "a man of the art."

"What is the cause of the negligence? Is it because physicians in general do not inspire the necessary confidence?" he queried, and "why do they not inspire that confidence? Is it because the public has so often been duped by charlatans who do not even have the necessary talents to be bootblacks? The ethical doctors have necessarily suffered from the maneuvers of these scourges of the human species." He welcomed the advent of the new college because it promised a strong guarantee for the safeguarding of health, and because of the assurance that its students would possess the indispensable knowledge needed for the practice of their art.

The cudgel was taken up in defense of the new college by a correspondent who signed himself "Humanitas." He prefaced his remarks by stating that he had neither the intention nor the desire to precipitate a discussion relative to the merits of the medical college, but that he shared the opinion of a majority of the citizens, the greater number of whom were most respectable, and enlightened, relative to the advantages to be drived therefrom by the country. He stated that the sole purpose of his communication was to destroy by a simple recital of the facts, the impression caused by an article signed "An American Physician." He cited the fact that the London College of Medicine was organized through the efforts of a single individual, Dr. Thomas Linnoire, of All Saints, at Oxford. That the University of Pennsylvania, the most prominent institution in the United States, well known by all American physicians, originated from an association of a few enterprising doctors of Philadelphia, for the purpose of delivering lectures on the different branches of medicine. Encouraged by their success, they petitioned the state legislature to incorporate their institution. Their request was not only granted but funds were allotted to continue their good work. He made the prediction that the college of medicine of Louisiana would not only follow the same footsteps, but would be crowned with the same success. He announced that the state legislature would be appealed to, at its next session, for the grant of a charter and for sufficient funds to accomplish the desired purpose, and he felt certain that many persons in the state would lend their aid.

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[*] A literal translation.

He asserted that the offer of a professorship was made to one of the most distinguished French physicians of New Orleans, which he declined after mature deliberation, because he did not feel that he was sufficiently conversant with the English language.

"An American Physician" retorted, this time in the English language, in the *Bee* of October 10. His letter reads thus:

> Mr. Editor: I have read in the *Louisiana Advertiser** a communication supposed to originate from a member of the future medical college, in which the author complains of the virulent attacks from many quarters aimed at that institution. He assumes that these attacks ought to be ascribed to interested motives, but I am far from attributing to the writers these selfish and despicable views. Instead of apprehending any danger for the institution, I really believe that all persons possessing but a moderate share of common sense, and particularly those of the profession, will on the contrary be highly gratified at the establishment of such a school, if it afforded all the requisites indispensable to attain. the object contemplated by its establishment.
>
> Now I will answer more in point, to what concerns me in the above article. I am not a French lawyer, as says the author, but really what is purported by my signature, which I will show if necessary,—and that I have at least the same right to assume the titles of physician as any of the professors of the embryo faculty.
>
> He sneers at me because I pretend that a medical college should only be established by an Act of Congress. I am very far from denying to Congress the right of passing such a law, since I am of the opinion that a faculty of medicine, instead of a local, is of a general interest, and that it never was contemplated by the writers of the prospectus that their students, on leaving the institution, should be allowed to practice only within the limits of Louisiana, which, however, must be the necessary consequence of a law passed by the Legislature, and if this ever happens that body might be expected to take the utmost care that the professors should give proof of their capacity, before being allowed the right, if I am allowed to use the expression, to dispose of the lives of their fellow citizens.
>
> 2nd: My opponent who has a turn for jesting, pretends that it is my opinion that the professors should be gray headed. I really was so ignorant as not to know that many persons have gray beards at thirty. If such a notion is entertained and professed by the future faculty, I will certainly go and listen to the reasons alleged in demonstration of it; but seriously speaking, I contend that in general it should be much more desirable that men with gray beards in preference to beardless youths, should teach the difficult art of curing diseases, an art that the great Hypocrates maintained should be studied through life, however long it might be.
>
> In conclusion the author of the article pretends that I blame the faculty for not having invited some French physicians to aid in the formation of the Institution.

* Unfortunately this issue of the *Louisiana Advertiser* is not available.

The gentleman must be almost utterly unacquainted with the French language, in thus construing my expressions for there is not the least mention made of French physicians. By Europeans I mean English, German, French, Spanish, Italian physicians, a great number of whom can write and speak correctly the English language.

I did say the Creole or European physician, and add that had the founders of the college proposed it to them, they would have opposed it on the ground that such an institution cannot be self erected, at the will of the proposers; which as far as I can see, has no other meaning than that the Creole or European physicians could not with any excuse have co-operated in the execution of the project.

I do repeat it; no man of sense will ever oppose an institution so evidently calculated for the public benefit—as a medical college established in New Orleans, as it is alleged by my opponents, who affect to shift their ground to this new question;—but without intending to hurt the feelings of any man, I think the professors of such a college should not be self appointed to such high functions, which to be successfully performed, must stand the test of public scrutiny, or otherwise have afforded proof of great medical and chirurgical requirements sufficient to entitle them to the honour of professorship.

I consider them highly competent, but should they continue still to doubt, I cannot but think that they should be much gratified at finding a fitting opportunity to display their knowledge before the public eye. Thus they will avoid any suspicion that in establishing a medical school, they have been more influenced by their interest and a desire to accumulate filthy lucre, than by a due regard to their talents or their love of humanity.

The Legislature should not grant them a charter or give them money unless satisfied as to their attainment.

An impartial public I think will readily observe that I do not write under the influence of bad feeling. On the contrary I entertain a great esteem for the writers of the prospectus; with most of them I am personally acquainted. My only object was to give publicity to my views, which I believe are based upon the honour of the profession.

If, as it is pretended, a distinguished French physician has refused to associate himself with the future faculty, this refusal corroborates what I have advanced on the subject I have treated. It confirms what I have said that no physician of whatever origin he may be, comprehending that he owes to his profession, will ever consent to support an institution which may be regarded as illegal, notwithstanding the respectability of those who have given it unauthorisedly a local habitation and a name.

(signed) An American Physician.

That communication, evidently written by a physician of foreign birth, provoked the following diatribe from the pen presumedly of one of the organizers of the new college, which appeared in the *Bee*, October 13, 1834:

MUGITUS LABYRINTHI

Mr. Editor:

Having observed in your last paper an essay signed "An American Physician" endorsed to advance objections to the establishment of the "Medical College of Louisiana" under its organization; we have thought it proper to write a few words in reply to that communication, with a view to elucidate the subject, and expose the errors under which the writer of that article laboured.

The gentleman commences his remarks by disclaiming the influence of any invidious motives, and strenuously asserting the right and title to the appelation of *Doctor*—In this respect he needs no one to blow his trumpet—He then goes on to make some wise and current remarks respecting the appointment of a college by the Congress of the United States. Is the "American Doctor" so ignorant of the laws of his country, as not to be aware that Congress has no right to interfere in such matters. . . : His assertions, if we understand his phrase aright, that the Legislature cannot incorporate a college, the diplomas of which will be legal except in Louisiana, is so marked an absurdity, as not to need a moment's notice. If this be true, there is no school in the Union capable of sending forth physicians legally qualified to practice the profession, anywhere except within the limits of their own States.

With respect to the fact of his being, as he terms himself, an *American* we have strong doubts, for we do not conceive it possible, for an American professional man, to manifest so profound an ignorance of English Grammar as this writer has done; his sentences are many of them obscure and in fact incomprehensible to our understanding, and we are inclined to consider his signature as altogether usurped and *soi-disant*.

Indeed it appears quite plain to us, that this gentleman is pretty much in the situation of a "*mus in pice*"; he has commenced making his remarks on a subject of which he is evidently totally uninformed, and is deficient of a "*quantum sufficit*" of sense to retract from the disagreeable dilemma, with credit or satisfaction to himself. We shrewdly suspect that if an anatomical investigation was made, the existence of a perfect vacuum would be discovered in one place besides the Torricellian tube, namely in the interior of the gentleman's cranium.

Our author seems inclined to view all the faculty in the light of boys,—perhaps as he is himself advanced in years; if this be the case, there is a little excuse for his nonsensical garrulity, but we would advise him for the future to confine his paltry attacks to those more equal to himself in information and acquirements. We think his style and language would better suit the "*ignobile vulgus*" then enlightened minds.

Notwithstanding his assertions to the contrary, we are disposed to believe that he considers himself one of the adept, and is abusing the present faculty for not possessing sufficient penetration to discover his merits and offer him a professorship.

"Invidia, siculi non invenere tyrani tormentum magus."

(signed) Marcurius.*

With this last communication this campaign of vituperation between the French and English speaking physicians closed. Although the new college was still a subject of controversial discussions, the plan of attack was changed. The editorials and communications in the daily press were more constructive in tone, and a strong effort was made to have the lectures delivered in the French and English languages.

The establishment of a new college was accepted as a *fait accompli*. The curriculum proposed by the youthful founders of the medical college of Louisiana was discussed, criticized, scrutinized, investigated and dissected whenever and wherever doctors met. Prophesies were made as to the possibility of its success. The younger members of the profession, carried away by their undaunted enthusiasn, glorified its founders and predicted for it a brilliant future. The more matured and gray headed practitioners shook their heads, and although they acknowledged the necessity for such an institution, they voiced the opinion that there would not be a sufficient number of students, from the standpoint of education, qualified for the study of medicine. They ambitioned a college which would cast honor on the State of Louisiana, one which would graduate physicians the equal in learning, distinction and culture to those of the greatest centers of medical lore in the old country. They prayed for a high standard of medical education, and offered suggestions which, from their experience, they felt would prove most advantageous to the students of medicine.

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* It may be surmised that this communication was written by Doctor Luzenberg.

The following anonymous letter appearing, in the *Bee*, October 18, 1834, written in French by a proponent of a higher standard of medical education is interesting. It reads in part:

> Although a subject of a great deal of acrimonious discussion, the school of medicine about to be established offers great advantages. To this day no one has as yet proposed a solution for the difficulty. I will try to lift the veil which obscures the obstacles in its path. If I am successful in accomplishing this I will muster enough courage to detail a plan of medical instruction.

The first issue he discussed was: Should the lectures be delivered in the French or English language, or should they be given in both. He thought the latter plan was feasible, but he doubted that the proposed professors could speak French, and that even if they were able to do so, that they could conduct their courses of lectures in that idiom.

He conceded for the sake of argument, that the Americans did not wish to compel the Creoles to study medicine only in the English language, but admitted that the Creoles would much prefer to receive their instruction in the French. He asserted that there was not a language in which more science and medicine were written than the French language. He continued:

> The American Physicians who have appointed themselves to the School of Medicine of Louisiana appear to be actuated by philanthropic sentiments, and the French doctors who practice their art here, doubtless, have the same sentiments. If such be the case, they should teach without an honorarium. Then the professors would not be a burden on the Government. The number of classes could be doubled, and there would then be two professors for each branch, one of whom would teach in French, and the other in English.
>
> But I do not think that a French physician would accept a chair if he had to teach according to the scheme proposed in the prospectus. Although the teaching staff would necessarily be divided, the school could be directed by one dean and housed in the same domicile. Separate days could be designated for the courses given in the French and the English language.

He then discussed the status of primary education, and the necessity of a proper foundation for the study of medicine. The colleges established in New Orleans up to that time, he said, did not teach philosophy, and but few of the humanities. He dwelt upon the necessity of founding a college in which the classics and philosophy would be included in the curriculum. He also proposed that this college should be under the direction of the rector of the University.

He submitted a plan of medical education which was far in advance of the requirements of the colleges of the time in this country. He suggested a course of four years, the first of which would be pre-medical. The course was to be opened only to students who had studied the classics, and who were prepared for the study of philosophy. The third year Latin was to be reviewed, and philosophy was to be taught in the French language. The medical course for that term was to be limited to anatomy, physiology, chemistry, hygiene and medical physics. At the end of the first term, the students should pass a public examination and "those whose merits and application deserved the confidence of their professors would be entrusted with the teaching of the new students." By following this plan, the number of professors for the second year term would be augmented. During the second year, internal pathology, botany, operative medicine, and even pharmacy could be taught. During the third year special attention would be given to operative medicine, external and internal clinics, external and internal pathology. The fourth or graduating year should comprise internal clinics, medical history, internal pathology, medical jurisprudence, clinics and obstetrics. There should be a summer and a winter term.

He ended his communication with the statement: "Here is a course of medicine, I hope some day will be given to Creole students in the Medical College of Louisiana."

It is needless to say that such an idealistic plan of medical education fell on deaf ears. It was far beyond the times.

The editor of the French section of the *Bee* on October 21, 1834, deplored the fact that there was not in the city and its vicinity a college capable of giving a course of instruction befitting a student of medicine. He claimed "that was the greatest obstacle to the promotion of the new medical school; because before commencing the study of medicine, a student should employ a portion of his youth in preparatory courses, so that he will be thereby better able to understand that intricate science." He stressed the importance of having in this city an institution where students may be properly prepared for the study of medicine. He deplored the fact that such a school did not exist in the immediate south, and that, of necessity, the new school of medicine must draw its students from the northern states and from Europe. He appealed to the legislature of the State to assist in the promotion of the two colleges. He suggested that the college of St. James (Jefferson College) and the institution of Mr. Bellanger in New Orleans could, if they would procure special professors, offer a pre-medical course. He ended his editorial with the following admonition:

> The Medical College can give its course, it is their undisputable right. But what guarantee have we that the professors have the necessary qualifications if they are not legally instituted? And besides how do we know that the young men who take their course are fully able to understand them? It is then absolutely necessary, that the legislature must recognize officially the teachers, and that all students seeking admission to the medical school must pass a public examination. Such a serious undertaking demands the taking of all necessary precautions.

The announcement of the establishment of a medical college in New Orleans was hailed with delight in the surrounding country. The following editorial in the contemporary issue of the St. Francisville *Phoenix* voiced the heartfelt approval generally expressed by the press of the other parishes of the State:

> It will be perceived by reference to the prospectus published in our columns to-day, that a part of the enterprising physicians of New Orleans have put in

requisition the elements upon which to build up a Medical College there. This effect to supply a desideratum, universally acknowledged in our state, should be hailed with delight, and patronized by every philanthropist and lover of science, and we ardently hope that no one will lend a listening ear to the croaking of prejudice and the cold calculation of scepticism; but encourage by all laudable and efficient means, this meritorious experiment. We are glad to see that Dr. Barton fills an important chair in this infant institution. It is to us a strong and promising earnest of its success. We know his devotion to his profession, his untiring zeal, his experience, his sacrifices, and we have a confident assurance, if his efforts are properly responded to, the enterprise will not fail. Dr. Ingalls is a man of science, and his appointment we think, happily cast. The other gentlemen we are not acquainted with, but we have heard them highly spoken of. We shall advert to this subject hereafter as the occasion may seem to require, and in the meantime recommend an attentive perusal of the medical prospectus alluded to for the motives and reasons which have actuated and influenced those gentlemen, who have identified their reputation and fortunes in the accomplishment of their purpose.

Despite the strong opposition of a large number of the most influential members of the local medical profession, the organizers of the medical college, with undaunted determination, persisted in their efforts, which were eventually crowned with success.

Speaking of the difficulties encountered by these pioneers of medical education in the Southwest the *Bee* (April 29, 1835) editorially said: "The experiment was rather hazardous, as the establishment of a medical college was viewed with jealousy, if not suspicion. But the zeal and prudence of the gentlemen who united to form the faculty, nobly braved and conquered all difficulties."

The Medical College of Louisiana inaugurated its first course of lectures on the first Monday of January, 1835.

The minutes of the College state that Dr. Edwin R. Smith tendered his resignation of the Chair of Materia Medica, on October 2, 1834, because "the consideration arising from the loss of a very near and dear relative put it out of his power to retain the professorship with which he had been honored." His resignation was received with great regret of the cause which had occasioned his decision, and Dr. Edward H. Barton was unanimously elected to succeed him as professor of Materia Medica. Dr. Smith, although one of the organizers of the Medical College of Louisiana, never fulfilled the duties of the professorship.

Dr. Barton was editorially commended by the *Bee* as "a gentleman of extended information, great experience as a physician, having resided for more than fifteen years in Louisiana, and in every way fully qualified for the trust."

Chaillé tells us that during the first session no duties were discharged by Dr. Harrison, the Adjunct Professor of Anatomy and Physiology, in consequence of an indisposition, and that Dr. Warren Stone demonstrated anatomy.[1]

The college did not own its domicile; some of the lectures were delivered at the homes of the professors, and others in the hall No. 41 Royal Street, and twice a week lectures were held in the wards of the Charity Hospital. The course was of two years; the sessions were of four months.

The following is the introductory passage of the first lecture delivered to a class of medical students in New

Orleans. This masterly address attests the culture, the superior capabilities and the high scientific attainments of that great teacher, the first Dean of the Medical College of Louisiana, Dr. Thomas Hunt:

Until within the last century, and particularly the latter portion of it, Medicine was not entitled to be ranked among the sciences. Its principles had not developed. The labors of its professors were devoted towards speculations; to the invention of theories (so-called) founded on the principles of other sciences; to the discussion of subtle and abstract doctrines, and to the practice of empyrical arts.

The great defect of the ancients was their careless observations of facts, and their almost total neglect to register them. Carried away by a foolish pride, they imagined that truth was to be attained by the mere exertion of the mental powers of meditation. They accordingly misspent in the metaphysical jargon of the schools that time which they might have more usefully employed in a natural and practical observation.

The honor and glory of raising medicine from this degraded condition, of elevating her character, and placing her almost on a level with the exact sciences, was reserved for Bichat, the appearance of whose works, it is justly said, was the termination of the older and hypothetical medicine, and the commencement of modern physiological or philosophical medicine. The discovery of general anatomy, and the union of anatomy and pathology, have laid the solid foundation of a rational and scientific theory. Medicine, now marching with the banner of reason in her hand, will go on achieving victories, until her empire shall be co-extensive with the civilized world.

Nature, who in all her operations governs by fixed general laws, has not deviated from her ordinary course in regard to men. Scientific observation has established that his life is the result of organization, that every phenomenon of organized matter results immediately from those laws. To ascertain those laws, which are few in number and of remarkable simplicity, to become familiar with their operation, to know their cause, nature and seats of the lesions of structures, and the true character of remedial agents; these form a considerable portion of the labours of a physician. This is the work which the student of medicine undertakes—a work, to accomplish which is in the power of every well educated man, having an ordinary portion of understanding and a due spirit of perseverance. The sources from which the well established principles of the science are to be taught, are the different departments of learning allotted to the various professors of our institution. It would be foreign to the object of this address to extend any remarks by expatiating on the dignity and importance of the several branches of medicine.

Anatomy is the basis of all medical knowledge. All the branches of the profession are in a great degree dependent upon it, while it is independent of them. It is the science of organization, health and diseases. A competent knowledge of it is essential to the honest practice of medicine; for how can he repair the derangements of structures, who does not know what structure is? And the knowledge can only be acquired by unremitted labor and close observation in the dissecting room, with the aid of books. Anatomy presents no obstacle to its acquisition which is not easily surmounted by perseverance.

There is no mystery about science. Truth is simple and reveals her doctrines in a language intelligible to every mind. She affects no air of pedantry, and decrees it inconsistent with her vocation to annoy and perplex the learners with far-fetched and uncouth terms. To my mind, there is a moral sublimity in the picture of a learned and philanthropic man, conveying the lessons of wisdom and experience, in the beautiful language of simplicity, to an inquiring and intelligent student.

The first session of the Medical College of Louisiana was attended by eleven students, the greater number of whom were citizens of the neighboring states.

The first course of lectures terminated on April 27, 1835. The professors were highly commended, and it was stated that the lectures were well attended by the students as well as by "respectable persons of both sexes."

We read in the *Bee* of April 29, 1835, that the "first course of lectures by the professors of the institution has terminated. We have heard these lectures highly commended and have been informed that they were attended by respectable persons of both sexes,—in addition to the students: eleven of whom have already been matriculated."

It also stated that this was an auspicious commencement of the College.

The College was granted a charter by the State Legislature on April 2, 1835: It was entitled: An Act to Incorporate the Faculty of the Medical College of Louisiana and the Medical School of New Orleans. The preamble of this Act reads as follows:

> Whereas, the encouragement of learning is one of the first duties of an enlightened Legislature; and whereas, Thomas Hunt, M.D., John Harrison, M.D., Chas. A. Luzenberg, M.D., J. Monroe Mackie, M.D., Thomas R. Ingalls, M.D., Ed. H. Barton, M.D., Aug. H. Cenas, M.D., have associated themselves together and taken measures for the establishment of a Medical College in the City of New Orleans, and Whereas the establishment of such a college would greatly advance the cause of science and produce most beneficial results to the people of the State, tending at once to the general preservation of health, the increase in population, the extension of trade and commerce, the productiveness of agriculture and the rapid growth and promotion of the arts and sciences.

It was provided in Section one of that Act that they were thereby constituted a body corporate and politic under the name of "The Faculty of the Medical College of Louisiana."

Section four provided that:

> The Faculty of the Medical College shall be and they are hereby authorized to make such regulations as they might think proper for the election of professors, to remove and dismiss any professor from his professorship in the institution, and to fill, under any regulation that they may deem expedient any vacancy in the Faculty provided always that it shall require the concurrence of a majority of four-fifths of the members of said Faculty, to elect any professor or to remove or dismiss any professor from his professorship in said Medical College.

It was also enacted in Section six that the Governor of the State, the Judges of the Supreme Court, George Eustis, G. Mulligan, W. H. Sparks, and John B. Dawson be constituted the Board of Trustees of said College.

This act also provided for the incorporation of the Medical College of New Orleans, whose Faculty shall comprise Drs. Labatut, Lemonnier, Formento, Lambert, Fortin, Tricou, Conaut and others. Its Board of Trustees to be composed of the Governor, the Mayor, the Recorder, and the Members of the City Council of the City of New Orleans.

It was also provided in the act that the Medical College of New Orleans should have the same rights and privileges as the Medical College of Louisiana.

It is logical to surmise that the profession of the city were still divided among themselves. This division was racial, or rather it was lingual. The Faculty of the Medical College of Louisiana was composed of members of the Medical Physical Society, and that of the Medical College of New Orleans of those of the New Orleans Medical Society. The membership of the former was principally composed of the English and the latter of the French speaking physicians of this City.

Although the Medical College of New Orleans was granted a charter, it failed to materialize. Apparently its promoters realized the futility of such an institution in a country which was rapidly increasing its English-speaking population. The faculty of the contemplated medical school was composed of some of the most noted and cultured physicians in the South.

The Medical College of Louisiana, during its first year, was rent by dissensions. We read in the *Bee* of May 16, 1835, that Doctor Hunt, the founder, the chief promoter, and the Dean of the school, and whose ability as a professor was highly respected, resigned not only from the Chair of Anatomy, but also as the head of the institution. It stated no reasons for Dr. Hunt's resignation, but only said: "We are pleased to ascertain that the resignation proceeded from the most honorable and disinterested motives," and that:

> He had to encounter many difficulties from being placed in the vanguard of an institution, resembling one that had failed; and nobly he surmounted those difficulties, till he obtained a charter for the college and the patronage of the public. Of his superior attainments and capabilities for a professorship in any faculty, there can be no doubt; this, his lectures alone, delivered during the past season, sufficiently attested.

We can but surmise that only a very serious provocation would have induced Dr. Hunt to resign from the teaching staff of an institution he not only founded, but labored for so assiduously during the most trying and critical period of its existence. Today, we do not know the causes of the discord. The only intimation of the dissension is to be had from a few cryptic remarks in the daily press. The *Bee* of June 11, 1835, editorially commented:

> We are indeed sorry that the Faculty has forfeited the aid of the acknowledged ability of Dr. Thomas Hunt. It was almost well that the organization of that College commenced de novo, and that elections were consequently held for every deanship so instituted.

The chair made vacant by the resignation of Dr. Hunt was not immediately filled, for it was announced in the *Bee* of June 12, that "a successor to Dr. Thomas Hunt (as Professor of Anatomy) has not yet been selected; but enquiry is made in every quarter for an efficient candidate."

On June 11, 1835, it was announced that Dr. Ingalls had vacated his professorship of Chemistry to which Dr. W. B. Powell had been elected. On the following day Doctor Cenas tendered his resignation of the chair of Obstetrics, and Diseases of Women and Children. He was replaced by Doctor Ingalls. Speaking of this resignation a contemporary newspaper laconically remarked: "Apropos, would not an old woman answer very well as professor of midwifery?"

The name of Dr. W. Byrd Powell, the newly elected professor of Chemistry, was frequently mentioned in the news as well as in the advertisement columns of the contemporary press. He was an itinerant lecturer on phrenology. His lectures in New Orleans were very popular; in fact the reputation he achieved therefrom elevated him to the professorship of chemistry. The following testimonial attests the high regard in which he was held by some of the most prominent members of the clergy, the bar and the Medical profession.

New Orleans, June 5th, 1835.

To W. Byrd Powell, M.D.

Dear Sir:

The class recently in attendance on your instructions in the Congregational Church, have with one voice requested the undersigned to return you their thanks for the information you have imparted to them on the science of phrenology.

It gives us pleasure to assure you that all those who have listened to your entire course of lectures are satisfied that phrenology is an interesting branch of human knowledge. Your lectures delivered in a style perspicuous and strong, often eloquent and beautiful, are distinguished for an astonishing amount of valuable and instructive facts in relation to the philosophy of the human mind. These facts are entirely independent of all theoretical speculations on the mental science; and their importance would remain undiminished were all the speculations to pass away into utter oblivion; and give you the credit in this our new world, of being the first in laying the axe at the root of prejudice, and false philosophy and pioneering the road to truth, to the true science of mind and enlightened religion.

Those competent to form a correct judgment on the subject regard your reasoning in refutation of the most prevalent hypothesis concerning the formation of coal perfectly conclusive; and though they may not fully adopt the novel views which you have advanced, they can discover in them nothing chimerical, nothing repugnant to sound philosophy.

Permit us to add that we have been much gratified with the personal independence and decision of character displayed in your efforts to enlighten ignorance and overcome unbelief. You have declared your peculiar views with the sincerity of truth and maintained them with calm dignity which adorns those who with a just appreciation of human applause, regard it less than nothing in comparison with the value of truth and of a clear conscience.

Be pleased, dear sir, to accept the assurance of our esteem of your personal character, and our ardent attachment to those enlarged views of philosophy and religion of which you are an able and efficient advocate.

(signed) Henry A. Bullard
Benjamin Story
E. H. Barton
Theodore Clapp

On the second day of June of that year Dr. Powell gave a farewell gratuitous lecture on Phrenology; which was advertised in the *Bee*, June 2, 1835, as not only to be a revised edition of his last lecture, but to comprise an analysis of the whole science or rather theory.

Dr. Powell taught in the Medical School of Louisiana for only one session. The reason for the short tenure of his professorship is unknown today. He is the only one of the professors of New Orleans about whom there is any question of his ethical conduct. Why he left New Orleans, where he went, what he did, or what became of him, we do not know. Even the newspapers of this city which were so profuse in his praises, and contained so many of his advertisements, were ominously silent on his departure.

The second session of the Medical College of Louisiana opened on December 7, 1835, with a lecture from Professor Luzenberg, the newly appointed dean. The attendance, which was slightly increased, numbered sixteen matriculates.

It was customary in those days for the professors to extend, through the medium of the press, invitations to the ladies and gentlemen of the city to attend their opening lectures. They even extended to the public, on the paying of a small fee, the privilege of attending certain courses intended for medical students. The advertisement columns of the French and English sections of the contemporary newspapers are replete with these invitations. They are not only interesting but are of historical interest. From the following it will be seen that these public notices were always most flattering to the professors.

The following notices and advertisements are taken from the files of the *Bee* for the month of December, 1835:

> Dr. Edward H. Barton will deliver a lecture this afternoon at 41 Royal Street—his introductory for the season. From his known ability in his profession and diligence in accumulating observations and statistical details, we have no doubt of his being highly interesting.
>
> He will probably glance at the climate of Louisiana and New Orleans, and the local causes assigned for endemic diseases, for he has collected a vast number of facts bearing on this subject; and therefore can do it more justice.
>
> Medical College. Dr. Powell, the Professor of Chemistry will deliver his introductory lecture to-night at 7 P.M., in the hall of the institution, No. 41 Royal Street.
>
> The ladies and gentlemen of the City are respectfully solicited to attend. We are happy in having in our power to say to our friends, that this gentleman's course of lectures will be illustrated by an apparatus superior to that of any similar institution southwest of Baltimore.
>
> We can inform further that his cabinet of mineralogy, which he will use as far as it can prove auxiliary to his course, is equalled by few anywhere; and none on our side of the mountains.
>
> To the citizens and especially to the youths of our alluvial country, this must certainly prove both interesting and instructive. As a lecturer, his labours last spring upon another and highly interesting subject, must give more satisfactory information to the public than anything we can say.
>
> His subject to-night is of a general nature, and calculated to interest all, but more especially the friends of science, legislation and political economy.
>
> We bespeak for him a hearing not only on account of his talents but because he is the friend of our city, as he proved himself last summer in his public lectures in the West, by disabusing it of the slander which the idle, the ignorant, the prejudiced and the wicked have heaped upon it abroad.

And in the advertisement column we find the following:

> Medical College. Dr. Powell's course of chemical lectures will commence this evening at 5 o'clock P.M., in the hall of the institution, and will continue every day except Sundays, till the first of April. To the first week of this course the ladies and gentlemen are invited. During this time those who desire to attend the course, or only the popular

portion of it, will obtain tickets at his office No. 45½ Canal St.

At 7 o'clock to-night, at the same place, he will deliver his introductory. The ladies and gentlemen are solicited to attend.

He that desires to acquire an accurate knowledge of man, of physiology and pathology, should attend the daily lectures given at the Hospital from 12 to 1, by Dr. C. A. Luzenberg.

They are those of a master of his profession.

We have received an "Introductory Lecture on the Importance Derived from Medical Science in Improving the Physical Condition of a Country, etc." by Edward Barton, M.D., of the Medical College of Louisiana.

The lecture is published in pamphlet form, and can be obtained at any of the book stores. It contains much useful information—particularly as regards Malaria and swamp lands and should therefore be read by all the intelligent of our citizens. We would promise to make extracts from it; but that we wish our subscribers to purchase it.

The first year of medical education in New Orleans was a hectic one. Not only the success, but the very existence of the Medical College of Louisiana was then very precarious. It was the undaunted ardor, the overwhelming love of the profession, the steadfast determination, and the unflagging spirit to conquer no matter how nearly overwhelming the odds, as well as the fearless courage of these beardless youths, the organizers of the first medical college in the Southwest which surmounted dissensions in their own ranks as well as the untiring opposition of obstructionists.

They built well, for from this modest beginning, this college without even a domicile, with only eleven matriculates, grew to become a great institution, one whose influence is reflected not only throughout the South, but over the whole extent of these United States. It is today the Medical Department of Tulane University. Its graduates number over 6200. Its fame, its science and its achievements are known the world over. Its alumni are justly proud of their Alma Mater's distinguished heritage.

Too much honor and credit cannot be cast upon Thomas Hunt. It was his zeal and his love for humanity which impelled him to found nearly one hundred years ago a medical college in New Orleans. Louisiana owes him a debt of gratitude which cannot be repaid.

His memory is fitly perpetuated in the recently completed building of Tulane University, the *dernier mot* in medical school construction, where a marble tablet reads:

THE FACULTY OF THE MEDICAL
DEPARTMENT
OF THE UNIVERSITY OF LOUISIANA
HAVE ERECTED THIS TABLET IN
MEMORY OF
THOMAS HUNT, M.D.
A FOUNDER OF THE MEDICAL COLLEGE OF
LOUISIANA, IN SEPTEMBER A.D. 1834
WHO WAS BORN IN CHARLESTON, S. C.,
MAY 18, 1808,
AND DIED IN THIS CITY, MARCH 20, 1867.
HE WAS THE THIRD PRESIDENT OF THE
UNIVERSITY OF LOUISIANA
AND PROFESSOR OF PHYSIOLOGY AND
PATHOLOGY
IN THE MEDICAL DEPARTMENT.
THE UNIVERSITY OF LOUISIANA MOURNS
ITS MOST GIFTED AND ELOQUENT
TEACHER,
AND SCIENCE AN ENTHUSIASTIC AND
UNTIRING LEADER.
HE BROUGHT TO HIS INSTRUCTIONS IN
PHYSIOLOGY
THE RESOURCES OF A CULTIVATED AND
LEARNED EXPERIENCE;

AND HIS DEMONSTRATIONS IN PATHOLOGICAL ANATOMY,
REPEATED FOR YEARS IN THE CHARITY HOSPITAL,
CONDUCTED BY A MASTER IMBUED WITH A PROFOUND KNOWLEDGE ON THE SUBJECT AND REMARKABLY GRACEFUL AND SKILLFUL IN THE USE OF THE KNIFE,
CONSTITUTED A COURSE THE MOST PERFECT EVER DELIVERED ON THIS CONTINENT.
THE SERVICES OF PROFESSOR HUNT
AS THE PRESIDING AND EXECUTIVE OFFICER OF THIS DEPARTMENT,
HIS VALUABLE DEVOTION TO IT,
AND THE LARGE INCREASE IN THE RESOURCES OF THE INSTITUTION
OBTAINED MAINLY BY HIS ENERGY AND HIS INFLUENCE
FROM THE REPRESENTATIVES OF THE STATE
HAVE ENTITLED HIM TO THIS GRATEFUL MEMORIAL.

The Medical College of Louisiana during the first ten years of its existence was of slow growth. The number of its students, although then slightly increasing year by year, was small and its graduates seldom exceeded ten a year. The roster for the second session shows thirty matriculants.

The first graduation exercises took place at four o'clock in the afternoon of April 5, 1836, in the Congregational Church in St. Charles Street. The orator on that occasion was the Honorable Henry A. Bullard, the learned and distinguished Justice of the Supreme Court of Louisiana, who by virtue of his office was a member of the Board of Trustees of the College. He was also the founder of the Louisiana Historical Society.

The exercises were opened with prayer by the Reverend Theodore Clapp, author, humanitarian, and one of the most noted as well as one of the most beloved clergymen of this city. The Dean of the Faculty, Dr. Luzenberg, delivered an oration in Latin, which was said to be in conformity with a custom which was more honored in the breach than in the observance. Mr. George Eustis, a prominent member of the local bar, and also a member of the Board of Trustees of the Institution, spoke eloquently to the graduates. After the conferring of degrees, the exercises terminated with prayer. The degrees of Doctors of Medicine, the first conferred, not only in Louisiana, but in the Southwest, were awarded to the following students: Messrs. M. M. Carpenter, R. S. M. A. Delatule, Alphonse Delavigne, Walter Fosgate, Alexander Hart, Albert Simeon Kostki, Ogden D. Longstaff, John C. Lawhon, John H. Lewis, F. J. Romer, Cornelius Traweek.

The *Bee* on April 6, 1836, reported that:

> The assembly convened on the occasion was more respectful than numerous. But science and literature are yet in their infancy in New Orleans.
>
> The Medical College of this State has some very intelligent and experienced professors,—such as Luzenberg, Barton, Harrison, Cenas, Ingalls, Powell and Mackie, and will doubtless win that success which its many local advantages present and its real merits deserve and demand.
>
> Henceforth it may rival others of fame, and be honored as well as supported throughout the United States.

The following recommendation was incorporated in the message of Governor E. D. White to the Legislature of the year 1836:

> The Medical College originating in scientific zeal, and supported by private contribution, is doing credit to itself in promoting medical education, and the

study of the peculiar diseases of our climate. The number of the students has considerably increased since the last year, and its prospects are such as to test the practicability of founding such a school here, and to warrant whatever patronage the Legislature might think proper to extend it.

Shortly afterwards, a bill was presented in the Senate by Senator Brownson, to appropriate $60,000.00 for the erection of an edifice for the use of the Medical College of Louisiana. This grant was predicated upon the condition that the property should belong to the state, and to revert back to it should the college cease to exist. The following arguments were advanced by the proponent of the bill: "The State would be benefitted not only in aiding medical knowledge and endowing a really useful institution, creditable alike to Louisiana and to the individuals connected with it, but would obtain the gratis attendance of the professors of the Charity Hospital."

While the bill was unanimously adopted in the Senate, it failed of passage in the House.

The second annual report of the Medical College of Louisiana, dated January, 1837, signed by a committee of the Faculty composed of Drs. J. Harrison, J. Jones, and E. H. Barton, complimented their graduates in the following flattering terms: "To express to you who are alike interested in us that the proof of their acquirements would have been creditable to any Medical School, and have well merited the first literary and professional honors conferred in the State of Louisiana, may be no invidious assumption of self-praise."

It was mentioned in that report that "the present course (1837–38) was more numerous in students and that the majority came from the neighboring states." They expressed regret at the departure of many students because of lack of proper facilities and suitable accommodations. The Committee called attention to the fact that they had "no apartments for lectures, and for the deposit and preservation of anatomical preparations, collections and specimen of natural history, pharmacy, botany, mineralogy, drawings, books, models and every variety of chemical and surgical apparatus." They asserted further:

> Without legislative aid neither individual talents and exertion, the good will of the community nor their well-merited reputation, can enter into competition with more favored institutions enjoying the benefits of public munificence, unsubjected to the exaggerated expenses of the City of New Orleans,* or the more formidable terrors of its reputed insalubrity.

It was announced in that prospectus that the course would begin on the first Monday in December and end on the fourth Saturday in March.

Even at that time the study of medicine was very expensive. It approximated $150.00 per session. The fees were:

Matriculation fee	$ 5.00
Price for tickets for each professor	20.00
Demonstrator's ticket	10.00
Graduation fee	30.00

The study of medicine for at least three years was required for graduation. Two years of this time to be spent in a medical school, and at least the last at the Medical College of

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* The cost of living in New Orleans was very high compared to other cities in the Union.

Louisiana. The applicant for a diploma in medicine should have attained the age of twenty-one and must present to the Dean a respectable thesis on a subject connected with medicine or some collateral science by the first day of March, and exhibit satisfactory testimonials of moral character and preliminary education.

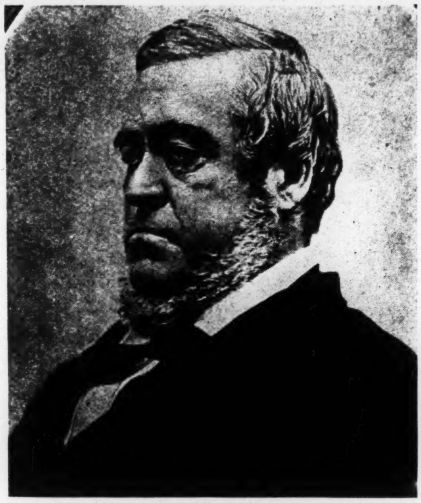
FIG. 5. DR. WARREN STONE.

The following professors composed the Faculty for the session 1838–39: Warren Stone, M.D., Professor of Anatomy; Ed. H. Barton, M.D., Dean and Professor of the Theory and Practice of Medicine; John Harrison, M.D., Professor of Physiology and Pathology; James Jones, M.D., Professor of Obstetrics and Diseases of Women and Children; J. Monroe Mackie, M.D., Professor of Materia Medica and Therapeutics; John J. Riddell, M.D., Professor of Chemistry and Pharmacy; Warren Stone, M.D., Professor of Surgery.

The board of Trustees of the College were as follows: His Excellency E. D. White, Governor of the State of Louisiana; Honorable F. X. Martin; Honorable H. A. Bullard; Honorable H. Carleton; Honorable R. C. Nichols; George Eustis, Esq.; G. Miligan, Esq.; Wm. H. Sparks, Esq.; Major General J. B. Dawson; General S. Johnson; Judge Butler and Judge Brownson.

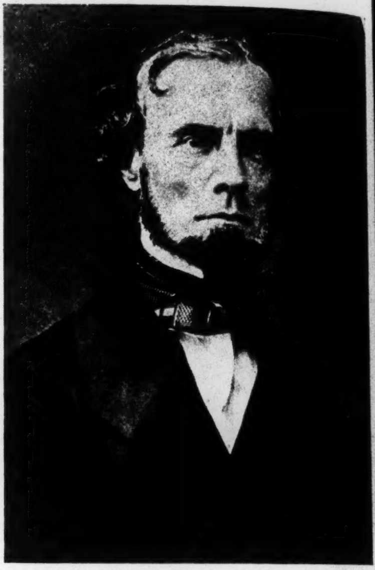
FIG. 6. DR. JAMES JONES.

The graduation exercises for that session took place in the large hall of the Charity Hospital on March 28. The valedictory address was delivered by Professor J. Monroe Mackie.[2]

At that time changes were frequent, not only in the personnel of the Faculty, but in interchanges between the various chairs. The catalogue for the session of 1839–40 announced that Dr. James Jones reliquished the chair of Obstetrics and Diseases of Women and Children for the professorship of the Theory and Practice of Medicine, replacing Dr. Barton who resumed the teaching of his original branch, Materia Medica and Therapeutics, previously taught by Dr. Mackie who

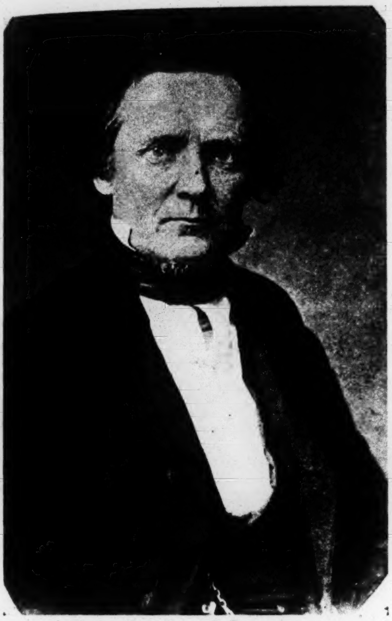

FIG. 7. DR. JOHN J. RIDDELL.

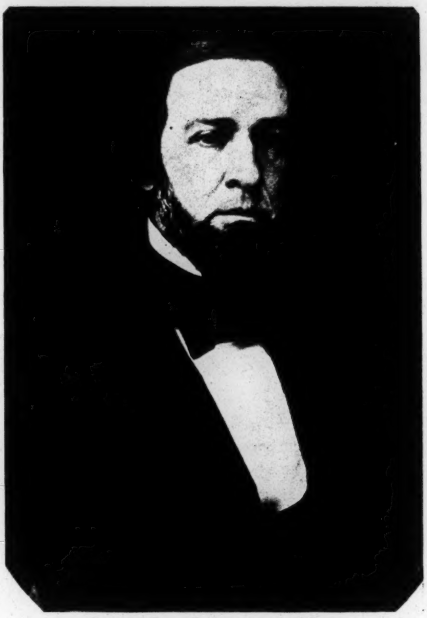

FIG. 8. DR. GUSTAVUS A. NOTT.

had resigned. The new appointments were G. A. Nott, M.D., Professor of Anatomy; A. H. Cenas, M.D., Professor of Obstetrics and Diseases of Women and Children; C. W. Morgan, M.D., Demonstrator of Anatomy.

It was announced that Doctors Nott and Cenas had returned from Europe after a stay of a few years devoted to preparing themselves for the teaching of their respective branches.

A school of pharmacy was established by the Medical College of Louisiana on October 20, 1838.

It was not until the end of the year 1840, that the College acquired its domicile. It was a modest building in the immediate vicinity of the Charity Hospital, which at that time was considered to be a comparatively retired location. For the first time the lecture rooms were under one roof.

The prospectus for the session of the years 1840–41 gives the following interesting account of the curriculum:

The professor of anatomy limits himself to special anatomy and thereby completes everything belonging to his course.

The Professor of Physiology exhibits likewise to his class all tissues, apparatus and organs of which he is to communicate the functions, and performs his physiological experiments in their presence; on the subject of General Pathology and Pathological Anatomy he pursues a similar course.

The course on the Theory and Practice of Medicine is one of special pathology, and special therapeutics, leaving to another the subject of General Pathology, and avoiding useless dissertations on Nosology, Contagions, Miasms, etc.; it is devoted to the history, causes, character, nature and treatment of particular diseases. These the Professor more fully illustrates by clinical lectures twice a week in the wards of the Charity Hospital.

> The greater part of the Surgery Course is delivered by the Professor at the bedside of the patients; and all his operations and dressings are performed in the presence of the class. In the Surgical Department, the advantages of this college rank those of all others in the Union. The number of wounds, fractures, dislocations and other injuries, and diseases requiring the frequent exercise of operative surgery, admitted into the wards of the New Orleans Hospitals, will be found on examination, to exceed that of any other in America.
>
> In the clinic of Obstetics and on Diseases of Children and of Females, the same care is taken to touch lightly upon all that is not useful, and to bring forward everything of practical importance. In no respect do the modification of climate affect diseases, more than those in females and children. Good models and plates are frequently resorted to.
>
> In the chair of Materia Medica and of Chemistry, the same satisfactory and advantageous demonstrations and practical system of instruction will recommend themselves to the good opinion of the Pupils.

That session Dr. S. W. Ruff succeeded Dr. Barton to the Chair of Materia Medica and Therapeutics; and Doctor John Harrison was elected to the deanship. The following year the Chair of Dean Harrison, Professor of Physiology and Anatomy, was divided between himself as Professor of Physiology and Pathology and Doctor A. J. Wedderburn, as Professor of Anatomy. Doctor W. M. Carpenter was elected to the Chair of Materia Medica and Therapeutics, made vacant by the resignation of Doctor S. W. Ruff.

It was not until the tenth year of its existence that the State of Louisiana gave its official recognition to the Medical College of Louisiana. A lot of ground, 120 feet square, at the corner of Common Street and Phillipa, now University Place, was granted by the State to the college by an act of the Legislature for the erection of a suitable edifice to house that institution. This site was immediately in the rear of the State House, then situated on Canal Street between Baronne and University Place, which building was formerly the Charity Hospital.

The following interesting account of the grant of this site to the Medical College by the State Legislature and the conditions on which it was predicated, appeared in the first issue of the *New Orleans Medical and Surgical Journal*, May, 1844. It reads:

> Previously, in 1843, the Board of Administrators elected annually four physicians, one Visiting Physician and a House Surgeon, to perform the professional services of the Charity Hospital for twelve months, who had their professional services prescribed and received a small compensation. At the session of the Legislature in January, 1843, the Professors of the Louisiana Medical College petitioned that body to grant them a certain portion of the public square; on which to build a College Edifice, in consideration for which privilege they offered to render all the necessary professional services to the Charity Hospital for the term of ten years, free of charge. As soon as the other physicians of the city became appraised of the movement, they at once sent to the Legislature a counter-proposition against the prayer of the Professors, so far as related to the granting the exclusive attendance of the Hospital, but making no other objection to any other aid the Legislature might think it proper to extend to the Medical College; they likewise agreed to attend the Hospital gratis. The result was that the Legislature very properly granted the Professors a site for a College Edi-

fice, and held them bound to attend the wards of the Hospital for the next ten years, provided they should be called upon; but that they should be entitled to no preference in the election of attending Physicians and Surgeons, by the Board of Administrators. The Board can make its own selection from the Body of the Licensed Physicians in the City; and if their appointments are not accepted, they have a right to demand the services of the aforesaid Professors. They moreover increased the number of attending Physicians to eight, and Visiting Physicians to two, and made the election semi-annually.

The Professors are generally elected to attend the wards of the Hospital during the winter season, and are enabled thereby to deliver clinical lectures to the Medical Class.

During the term following the adoption of these regulations, the professional services were most punctually performed; and the mortality of the Hospital will compare favorably with any previous similar period. The Hospital was more frequented by Physicians of the City, and more attention was paid by them to post-mortem examinations, and to special anatomy, than probably was ever done before during the summer months.

Some half-dozen students are admitted into the Hospital who are furnished board and lodging in the house, and are required to perform all the minor operations by the attending Physicians. To be admitted, they are required to give satisfactory evidences of their qualifications, moral character, etc.

Admirable opportunities are afforded these students; but few of them, however, can be induced to prosecute their studies; but a few of them, however, can be induced to remain at their posts during the sickly season; and it is melancholy to relate that of the three who determined to stay last summer, two died of Yellow Fever.

We are told that "the Faculty laboured under great disadvantages from its commencement, for want of a suitable house in which to deliver lectures; but this defect is now remedied, and they have a beautiful edifice, erected during the past year (1843), possessing every convenience necessary to this object."

In the same medical journal we have the following description of the new College Building:

> It is situated on a portion of the Capitol Square fronting Common Street . . . the facade being adorned with two very rich Corinthian columns. It contains on the ground floor a large and well arranged lecture room, capable of holding at least two hundred students, to which is conveniently attached the chemical laboratory, also two smaller rooms, appropriated to the purpose of a library and reading room. On the second floor is a large room which contains the Museum, besides two smaller rooms, and the Amphitheatre. . . . On the third floor is the dissecting room.

It was regretted that the library and museum were as yet small, but it was claimed that the "faculty were making laudable efforts to increase them."

This building was erected at a cost of $15,000.00. It was the domicile of the medical college until the year 1847. That year the college removed to a larger and more commodious building, erected for its purpose on an adjoining site. The former structure then became the domicile of the Law Department of the University of Louisiana.

In 1845, the success and fame of the College induced the Convention to establish, by the Constitution, a University in New Orleans, named the University of Louisiana, and to constitute the Medical College, as then organized, the Medical Department of said institution.

The Medical Department of the University of Louisiana was destined to become one of the greatest institutions of its kind in the United States. The first ten years of its existence were hectic ones. The number of its students was small. Its very existence was not only continuously threatened by the animosities and jealousies of many of the most influential members of the local profession, and by racial prejudices which were so strongly intrenched in the population of the city of that time, but by internal dissensions as well. During that period only one of the founders, Doctor Harrison, taught uninterruptedly, the others, for reasons unknown to us today, resigned their professorships.

During the first five years of the existence of the Medical College of Louisiana, lectures were held in the public halls, No. 41 Royal Street, No. 14 St. Charles Street and No. 239 Canal Street, in the offices of the professors, and from 1840 to 1843, in a small house in close proximity to the Charity Hospital. The faculty was greatly handicapped by the want of funds and the lack of the necessary equipment for the teaching of their profession. Despite these apparently insurmountable obstacles they conquered.

The great accession in population, not only in the city but in Louisiana and the neighboring states, legislative support, and the new domicile furnishing the necessary facilities for teaching medicine, were the dominant factors which spelled the success of that institution.

With prophetic vision the Editors of the *New Orleans Medical and Surgical Journal*, in the issue of January, 1845, predicted:

> At a day not distant, New Orleans must become the seat of a great Medical College; and if the present Professors of the Louisiana Medical School should not be destined to establish it, they will at least be entitled to the honor of having laboured zealously in the cause. Such has been the germ and growth of all great enterprises, and the pioneers who struggle with the first difficulties should share the glory of those who complete them. New Orleans possesses all the elements and facilities requisite for medical instruction; these will soon be fully seen and appreciated; and hence we confidently venture the prediction we have made.

The fame of the Medical Department of the University of Louisiana extended throughout the southwest. Not only students but practitioners of medicine came hither, attracted by the superior facilities for clinical medicine in the Charity Hospital and by the unquestionable high scientific attainment of the teachers of the medical college.

"We are pleased also to see several practitioners from the interior, who have come to spend as long a time as they can stay from home, for the purpose of refreshing and improving themselves. . . . Our hospitals are always opened to visitors and the professors invite all graduates to attend their lectures gratis," editorially commented a contemporary medical journal.[3]

Postgraduate medical teaching was evidently inaugurated that year in the South.

The Faculty for the session of 1846–47 was composed of the following professors: John Harrison, M.D., Professor of Physiology and Pathology; James Jones, M.D., Professor of Theory and Practice of Medicine; Warren Stone, M.D., Professor of Surgery; J. L. Riddell, M.D., Professor of Chemistry; A. H. Cenas, M.D., Professor of Obstetrics and Diseases of Women and Chilcren; W. M. Carpenter, M.D., Professor of Materia Medica and Therapeutics; A. J. Wedderburn, M.D., Professor of Anatomy; J. Y. Lemonnier, M.D., Demonstrator of Anatomy.

Dr. Lemonnier, the first Creole to teach in the medical college, succeeded Dr. John F. Eustis.

The roster of the college showed 163 matriculants, which was 60 more than for the previous session.

Dr. R. M. Graham in a masterly plea for a higher standard of medical education, delivered before the Physical-Medical Society of New Orleans, November 27, 1846, gives an interesting view of the medical profession of that time. He said:

> If we wish to advance, we must increase the power of our instruments of observation, . . . multiplying them will not do. We must require that men be educated before they enter the profession. And I will state, too, what I mean by education; a thorough classical, philosophical and mathematical education. Or plainer still, I mean that before one is allowed to enter the profession, he be required to have received the degree of A.B. at least from some College or University.
>
> Until this is the invariable regulation let us not call ours a learned profession; for it is as far from the truth, as it would be to call the profession of a carpenter or blacksmith a learned profession. If we wish to see the science of medicine advanced, we must qualify its members to philosophize, to observe facts, and to know how to engage in legitimate deduction. Extremely difficult as the science of medicine really is, is it not the height of absurdity to expect progress from filling up the profession with unlettered men? It is not only the height of absurdity; it is more than that. It is a disgrace to the profession of medicine, and a positive injury to society at large. I speak plainly on this subject, for it is time to speak plainly. We all deprecate the quack. But what is a quack? Johnson, in his dictionary, defines him to be "a vain pretender to physic; a pretender to arts which he does not understand." If such be the true definition, then the majority of our medical graduates are quacks; for who will pretend to say, that a young man understands the science of medicine after having only two courses of lectures in a Medical College?
>
> The thing is a monstrous absurdity. So long as the present system continues let us discontinue the use of "learned profession" and "quack" and say nothing about the progress of medical science.
>
> If we wish to elevate the profession and cause the science to advance, we must have an educated profession. Our members must be learned men, with minds fitted, by classical learning and a long course of philosophical studies, for the work of observation and deduction. With such men we look for progress; without them we may expect to sink lower in degradation, and to hear louder and longer the laugh of derision which is already raised against us.
>
> We will avail ourselves of this occasion to speak in just terms of our high admiration for the Medical College of Louisiana, the learned faculty of which are all members of this society.
>
> No medical school in this country has raised so high the standard for professional preferment or advancement as this College. And although it has struggled for years against a regularly organized opposition, no doubt can exist that it is firmly established. It now numbers about 160 students, young gentlemen from various parts of the

Southwest, and it may be said without any attempt at flattery, that they would compare, in all requisites of mental endowment and education with any class in the United States.[4]

Even as early as the later forties the standardization of medical education was a vital issue. The shortness of the sessions, the two year term, the small number of professors, the crowding of lectures, the lack of clinical facilities were subjects of controversial discussions. At that period a survey of twenty-four medical colleges in the United States revealed that one school had a lecture term of eight months; another, seven months; two, five and a half months; three, five months; five, four and a half months; six, four months; three, sixteen weeks; and two, fourteen weeks.[5]

One of these schools, the St. Louis University of Missouri, had eight professors; the others had six to seven professors, excepting the University of Virginia which had only three.

The Committee on Medical Education of the American Medical Association reported to the annual convention held in Philadelphia in 1847, that: "It is next to an impossibility, that the strongest intellect can receive and well digest some half a dozen discourses or more a day, embracing subjects which have sometimes little or no immediate connection with each other." It advocated that "with a lengthened period of teaching, a double advantage will be gained; a wider extent of information may be imparted to the student, while his time will be occupied with fewer lectures during the day."

The fixation of a minimum term of lectures of five months by that convention, although recognized by the profession as a step forward, did not meet with universal approval, for we read in the New York Annalist of August, 1848, that they "acquiesced, but very reluctantly, in the fixation of the term at five months, by the American Medical Association, and yet live in hopes that the future will see the period much increased."

The Faculty of the Jefferson Medical College, in their annual announcement for the year 1848, held that:

> The prevalent idea, that too much is attempted to be taught in the four months generally allotted to the medical session, is of more recent origin. . . .
>
> The time usually employed in lectures during four days in the week is six hours, and it is acknowledged in all professions that six hours daily ought to be devoted to professional reading. To lecture may be regarded as synonymous with "to read"; consequently the medical student who listens to six hours in the day may be looked upon as having been "read to" for six hours; and there can be no essential difference between reading and being read to, except in the circumstance that the latter is much easier on the student. The well informed and able lecturer adapts his elucidations more readily to the comprehension of his hearers than can be done in the best books. He has an opportunity of perceiving whether he is understood; and should he think he is not, he modifies and repeats his instructions.

The sessions of the Medical Department of the University of Louisiana usually opened on the third Monday of November and terminated on the third Monday in March. Ostensibly the course was of three years; the first year was supposed to be under the direction of a private tutor or preceptor, and the other two in a medical college. The lectures in the different branches were divided as follows:

Anatomy, five hours; Pathology and Physiology, four hours; Theory and Practice of Medicine, six hours; Surgery, five hours; Obstetrics and Diseases of Women and Children, four hours; Materia Medica and Therapeutics, four hours; and Chemistry, four hours, the course totalling thirty-two hours per week.

The increase in the number of students was rapid and steady. They flocked hither not only from the neighboring states, but practically from every part of the Union. Ninety-three students, of whom fifteen were graduates, enrolled for the session of 1845–46, and 188, of whom thirty-nine were graduates in medicine and two in pharmacy, matriculated in 1850.

The Board of Administrators of the University for the late forties was composed of: Isaac Johnson, Governor of the State of Louisiana; George Eustis, Chief Justice of the Supreme Court; A. D. Crossman, Mayor of the City of New Orleans; Honorable P. W. Farrar, Speaker of the House of Representatives; Maunsel White; R. C. Nicholas; Judge J. T. Preston; Isidore Labatut, M.D.; Levi Pierce; M. M. Cohen; W. P. Hort, M.D.; W. C. Micou; C. Roselius.

The rapid growth of the college soon demanded a more spacious domicile. In 1848, a new edifice was erected on Common Street, between Common and Phillipa, now University Place, on the present site of the Crescent and Tulane Theatres. This new home of the Medical College as was already mentioned, was adjacent to the former domicile, which was afterwards used to house the Law Department of the University. This group of buildings was destined to be the home of the University of Louisiana for nearly forty years. At that time the first amphitheatre at the Charity Hospital was completed. The teaching facilities of the Medical College were thereby greatly improved.

This new building was one of the largest and best arranged for the teaching of medicine in the United States. Its architecture and size were imposing. Its dimensions were 100 feet front by 104 feet in depth. It contained three large lecture rooms, capable of accommodating 600 students; a large hall for a museum, several large dissecting rooms, and the necessary number of private offices for the professors.

During the winter months the wealth of teaching material in the Charity Hospital was placed altogether at the disposal of the Professors, for they were in full charge of the wards of that institution during that time. This exceptional advantage, unsurpassed by any other college on this continent, was editorially commented upon by a contemporary medical journal.[6] It said:

> We fear that the great advantages offered by the Hospital as a school of practical medicine, has not yet been fully appreciated by the profession; but the time will come, and that soon, when both the teacher and student, will not only talk of clinical medicine, but the one will hasten to teach, and the other to learn, medicine in the only way in which it can be taught. To make a good and practical physician we must educate all the senses; the touch, the eye, etc., and in this way nothing will be omitted calculated to convey knowledge of diseases.
>
> To teach practical medicine, nothing is equal to the opportunities presented to the student by our great Charity Hospital. Here he may study the symptoms of diseases during life, and inspect the body after death; here, no obstacle is interposed to wrest from science the

fruits which justly belong to her; in other words, post-mortem examinations are not only tolerated almost to any extent, but the public actually encourages the practice even in private circles. It is the fault of the Professors if it does not make this one of the first practical schools of Medicine in the United States—in the world.

Doctor John Harrison, Professor of Physiology and Pathology of the Medical College of Louisiana and at one time its Dean, died on March 13, 1849. He was not only one of the organizers of that institution, but he taught uninterruptedly from the time of the founding of the college to the day of his death. He was succeeded by Doctor Thomas Hunt, the organizer and the first dean of the school. His loss was greatly regretted not only by the Faculty and alumni of that college of medicine, but by the profession of the South.

The following beautiful tribute of respect was paid to the memory of Doctor Harrison by the Physico Medico-Society of New Orleans at a special meeting held on March 31, 1849:

> That, since its institution, a more painful duty has not devolved upon it than to place on record the death of one, whose association with us has been marked by all those high qualities of heart, and rare endowments of mind which proclaim him the man, the scholar and the teacher. That in whatever aspect he is seen, the eye rests on bold and prominent traits of character; generous in impulse; magnanimous in conduct; firm in purpose and lofty in aim. Pleasing as was this combination of a dignified moral nature, he shone more conspicuously as one endowed with the highest order of intellectural gifts. With perceptive faculties aptly fitted to the pursuit to which he was called, he possessed the higher and nobler gift of reason, which guided to the contemplation of first principles, and a knowledge of elementary forms. Into the wide domains of natural science, his manly understanding pushed its inquiries and enriched itself with spoils from all its grand subdivisions. There was no department of useful and polite knowledge that hid its treasures from his active researches. The evolutions of mind, subtle, mysterious, wonderful as they are, and the diversity of material being in all its forms and relations, were familiar to him as his every day thoughts. . . .
>
> With all this diversity of knowledge and largeness of attainments, he combined a modesty which shrunk from vain and ostentatious displays. His opinions were his own, were liberal, comprehensive, and positive; yet he was never known to urge them at inopportune moments, or in a spirit of dogmatism. They were the ripe fruits of years and research; were well matured; well elaborated. Yet they were the firstlings of a mind mistrustful of its powers, although conscious of the truth and direction they had taken."

The college, in 1850, received a generous appropriation of $25,000.00 from the State Legislature to purchase anatomical preparations illustrative of human and comparative anatomy; anatomical paintings, plates and drawings; medical, surgical and obstetrical preparations, paintings, plates, drawings, and instruments; preparations for the teaching of physiology and pathology; pharmaceuticals, chemicals and philosophical instruments, etc. Professors Cenas and Wedderburn were entrusted with the responsibility of making these important purchases. That summer they embarked for Europe to perform the task imposed upon them. They procured museum specimens and anatomical preparations from every large medical center.

The College prospectus for the session of 1851–52 mentioned that "amongst the preparations in human and comparative anatomy, are the entire collection of muscular preparations from the Academy of Anatomy at Florence, representing in about 300 wax models, perfectly executed, the entire anatomy of the muscles.

Thibert's entire collection of models, representing the anatomy of tissues, and Auzou's valuable cabinet of human and comparative anatomy. The collection of human bones is very large and put up in the best manner; and there is also a very handsome collection of skeletons of the inferior animals, a large number of urinary and biliary calculi; many of which were obtained from Dupuytren's museum at Paris and from the College of Surgeons in London.

Wax models of diseases of the skin were made by Mr. Towne from his original collection at Guy's Hospital in London, which was then the only institution in the world which could boast of having such a magnificent collection. Professor Wedderburn in a letter dated June 2, 1850, written in Paris addressed to Dean Gustavus Nott stated that Mr. Towne was engaged in making anatomical and pathological preparations for that institute for twenty-five years. He averred that Towne's models of diseases of the skin are superior to anything on the Continent, or in fact, in the world; and that his anatomical models in wax are infinitely superior to anything he had seen. "In fact," he said, "my imagination never could have conceived that art could have arrived at such perfection."

"He has never sold a preparation in his life," Dr. Wedderburn wrote; "he has had repeated applications to make the same for different colleges in England, but he has always refused." Evidently a magnificent fee, made possible by a liberal appropriation, induced that master craftsman to make an exception for the medical college in New Orleans, for shortly afterwards these splendid wax figures illustrating eighty skin diseases were placed in the museum of the Medical College of the University of Louisiana.

Dr. Wedderburn also announced that he had ordered 500 specimens of Materia Medica to be put up in beautiful glass bottles, and to be arranged in their natural order. This collection was acquired from Verron and Fountain of Paris, and was said to be on a plan of the College of Pharmacy of Paris.

The local museum was one of, if not the largest and the finest in this country, and it was even claimed that it equalled any in Europe.

In the early fifties the success of the college was assured. It was one of the best equipped schools of medicine in the Union. It had learned professors and possessed unexcelled facilities for teaching; unlimited clinical material in the Charity Hospital; a magnificent domicile, the last word in medical college construction in this country; an amphitheater at the Charity Hospital where cases wer shown to advantage, and a museum unsurpassed not only in the States but in the world as well.

Its renown spread everywhere. Students flocked hither in large numbers not only from the South, but from the East, North and West.

Its eighteenth session (1851–52) opened with 186 matriculants, and its graduates numbered 43. The following year the number of its students increased to 219 and its graduates to 72, amongst whom must be noted Doctor Stanford E. Chaillé, who was destined to become the future dean of his Alma Mater, and one of the most beloved and renowned teachers of medicine in the Southland.

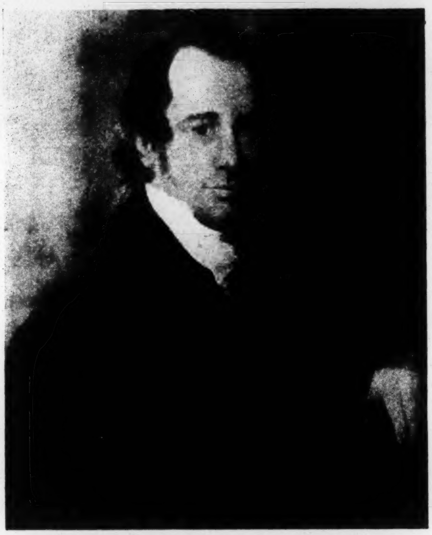

FIG. 9. DR. EDWARD HALL BARTON.

"More than seventeen hundred names are on the register of matriculates," was proudly observed in the prospectus for the nineteenth session, and "many of the graduates have acquired honorable distinction and scientific reputation as Surgeons and Physicians."

The devastating epidemic of yellow fever of the year 1853 was doubtless the cause of the small enrollment of students that winter. The register for that term shows only 190 matriculants and 51 graduates.

The members of the Board of Trustees of the University of Louisiana during the early fifties were: P. O. Hebert, Governor of the State of Louisiana; Thomas Slidell, Chief Justice of the Supreme Court of the State of Louisiana; A. D. Crossman, Mayor of the City of New Orleans; Honorable M. Walker; Honorable Maunsel White; Honorable D. V. Nicholas; Honorable Isidore Labatut, M.D.; Levi Pierce, Esq.; M. M. Cohen, Esq.; John Slidell, Esq.; James Rodd, Esq.

Doctor John J. Castellanos, the medical historian, was the valedictorian of the graduating class of 1856.

Drs. Cornelius C. Beard and Samuel P. Chopin were appointed demonstrators of Anatomy in the fall of the year 1853. They subsequently became the organizers of the New Orleans Medical College, and respectively its professors of Anatomy and Surgery.

Doctor J. C. P. Wedderstrandt was the professor of Anatomy and Doctor Gilbert S. Vance the Demonstrator of that branch for the session of 1856–57. Dr. Wedderstrandt filled the chair of Anatomy one year, and was succeeded by Doctor Josiah C. Nott of Mobile, Alabama, who was succeeded the following year by Doctor T. G. Richardson. At that time Doctors S. E. Chaillé and W. C. Nichols were chosen demonstrators of Anatomy.

The Board of Trustees of the University for the later fifties consisted of: R. C. Wickliffe, Governor of the State of Louisiana; E. T. Merrick, Chief Justice of the State of Louisiana; C. M. Waterman, Mayor of the City of New Orleans; W. N. Mercer, M.D.; Daniel Edwards; Newton Richards; G. W. Race; W. A. Gordon; P. E. Bonford; W. C. C. Claiborne; Charles Genois; Isidore Lanatut, M.D.

The generous appropriation made by the legislature of 1857 to the medical college was "applied in admirable improvements and alterations" planned by the renowned architects Gallier and Turpin.

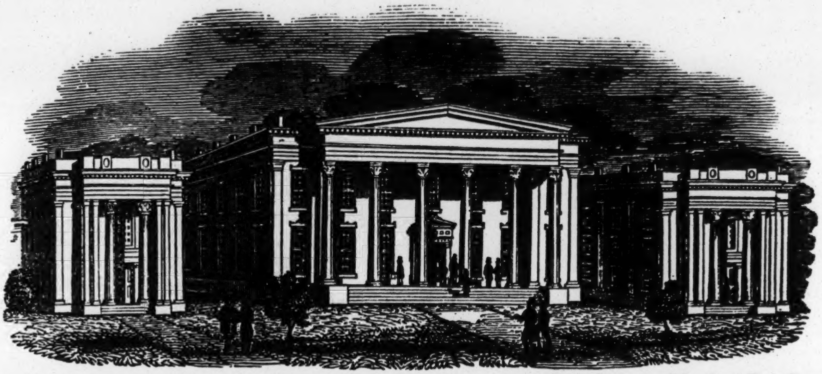

Fig. 10. University of Louisiana Medical Department from the Prospectus, 1860–61. "The Center Building Is One of the Most Spacious and Best Arranged for Its Purposes in the United States, and Is Occupied by the Medical Department." The Building on the Left Was the Domicile of the College from 1843 to 1847.

The reputation of the College had spread throughout the Union. Students flocked hither from Mississippi, Alabama, Ohio, Arkansas, Tennessee, Kentucky, Massachusetts, Missouri, South Carolina, Georgia, North Carolina, Maryland, Florida, Virginia, New York, Illinois, and from France, Mexico and South America.

Four hundred and two students, of whom 113 were graduates, registered for the term 1859–60.

The two years preceding the Civil War proved the most prosperous. For the session of 1861–62, 424 names were on the register of Matriculates. The roster of the school shows that during the first twenty-seven years of its existence 6482 students studied their profession within its portals. Such a magnificent showing is today amazing to us, especially in view of the difficulties encountered at that time in travelling and the merited reputation of the city's unhealthiness.

On July 6, 1860, Doctor L. M. Lawson was appointed Lecturer on Clinical Medicine with the title of Professor. He was the first to teach that branch of medicine. Professor Hunt was then the Dean of the School of Medicine.

The trustees of the University immediately preceding the Civil War were: T. O. Moore, Governor of the State of Louisiana; E. T. Merrick, Chief Justice of the Supreme Court of the State of Louisiana; J. T. Monroe, Mayor of the City of New Orleans; Honorable T. G. Hunt; Daniel Edwards; John Pemberton; J. A. D. Rozier; Wm. R. Miles; Robert J. Ward; Issac J. Seymour; Newton Richards.

During these twenty-seven years the State of Louisiana contributed $83,000.00 to the Medical College. Chaillé tells us that the state was fully repaid for its generosity. He gives the following estimate of the pecuniary benefits derived from these appropriations[7]: "Attendance upon the Charity Hospital for ten years, $24,000.00; the amphitheatre in the same hospital, $2,500.00; west wing of the University building (transferred to the Law

Department of the University), $15,000.00; library, apparatus, preparations in museum, etc., $20,000.00; repairs, insurance, etc., on the College edifice, belonging to the State, $16,000.00; education of indigent students, $42,000.00, amounting in all to $119,000.00."

New Orleans was then the third largest medical center in the United States. The two medical schools were very prosperous. The students attracted hither by the unexcelled facilities for medical teaching and the unusually large amount of clinical material in the Charity Hospital numbered in the two colleges, the Medical Department of the University of Louisiana and the New Orleans Medical College, approximately 617 students.

Unfortunately during the height of this unusual success, that great devastating war between the States broke out. Professors abandoned their Chairs for service in the field and students rushed to join the ranks of their respective sections. The Charity Hospital was converted into a military hospital. The portals of the medical colleges were closed for the duration of the Civil War.

(*To Be Concluded*)

JOHN JENNINGS MOORMAN, M.D.

A BIOGRAPHICAL NOTE

By GUY HINSDALE, M.D.

WHITE SULPHUR SPRINGS, W. VA.

DR. John J. Moorman held the record for length of service as resident physician at the White Sulphur Springs, covering a period from 1838 to 1883, or about forty-five years. He was born n New London, near Bedford, Virginia, January 27, 1802; died and was buried at Salem, Virginia, January 22, 1885. The three monuments, including those of his wife, Elvira Houston, and his son, Robert, are in the East Hill Cemetery, Salem.

Dr. Moorman received a part of his medical education in Philadelphia, having attended for one year lectures at the University of Pennsylvania. He was one of the pioneers in American Medical Hydrology. He had an observing mind and was the first to publish systematic observations on the mineral springs of America.

Our American springs have had a remarkable history. It was Dr. Moorman's privilege to see their development and growing popularity, and by his personal influence and published writings he contributed greatly to the intelligent use of one of our greatest national resources.

Dr. Moorman had a national reputation through his efforts to give accurate information about the mineral springs of Virginia and of the United States and make them more widely known. I have a copy of "Mineral Waters of the United States and Canada, with a map and plates and general directions for reaching mineral springs," by Dr. Moorman, and after his name is the title "Resident Physician at White Sulphur; Lecturer on Anatomy and Physiology in Roanoke College, Virginia." This was published in Baltimore in 1867, and was dedicated to "S. D. Gross, M.D., Professor of Surgery in Jefferson Medical College, Philadelphia, in testimony of a high appreciation of his head and heart, as an humble tribute to his distinguished ability as a teacher, author and practitioner of the Healing Art, and under the promptings of a long-cherished friendship." By this honoring of Professor Gross, Dr. Moorman honored himself.

In the preface to this volume Dr. Moorman states that for more than thirty years he had "resided, throughout the watering season, at the White Sulphur Springs where, in the character of the Resident Physician, I have enjoyed ample opportunities of witnessing the various and modified effects of the water in almost every variety of disease and state of the system."

As early as 1839, Dr. Moorman had published a "Directory" for the use of the waters for, as he said: "Although thousands of individuals had, for more than a half a century, annually resorted to these waters, up to the period of issuing the directory not a line had ever been published relative to their medical applicability or the proper methods of prescribing them."

In 1846, Dr. Moorman published a small volume entitled "Virginia

Springs," designated to embrace what was then known of the various mineral springs of Virginia.

In 1855, and again in 1857, he published new and enlarged editions of the work and in 1859, "Virginia Springs and Springs of the South and West." His last work, to which we referred previously, covers over 500 pages and contains very valuable observations on mineral waters, particularly sulphur waters, with which Dr. Moorman had the greatest experience of any one of his time. He was also an entertaining writer as witness his description of a day at White Sulphur Springs:

> The morning has dawned, the forest songster in saluting the opening day has softly wakened the sleeper; the full round face of the sun soon appears above the neighboring mountain peak; the silvery vapor glides upward from the vale beneath; the fleecy clouds are gone and the dewy fragrance of the mountain air invites to active exercise. The visitors now gather around the health-giving fountain and after quaffing its waters, wend their way to the morning meal. This over the business of active enjoyment for the day begins. . . .
>
> Dinner over, the drawing room again becomes the center of attraction. In the room, during the crowded season, are each day brought pleasantly together a gay and richly dressed assembly, excelled in beauty, manliness and dignity by no other crowd ever assembled within the broad limits of our common country. Here congregate the fairest of the fair from every state and one can gaze and gaze on beauty until the heart reels in its very fullness.
>
> The company, wearied with converse or the promenade, retire to their cottage homes or to the inviting shade of the wide-spread oaks, underneath which, in by-gone years, the savage danced or the antlered monarch of the forest tossed his crest, now given up to the happy crowd who, in genial converse, while the hours away until the lengthened shadows and the fragrant air again invite to the walk, the ride, the drive, or other active exercise. . . .
>
> Such is, as it were, a shadowy outline of a day at the White Sulphur.

Dr. Moorman's picturesque language was matched by his attire. I have been told by Mr. A. H. Magee, who knew him, that he dressed very neatly and in the winter wore a long cloak lined inside with red and that he wore gold rimmed spectacles and carried the conventional gold headed cane. According to Mr. Magee, a patient stopped Dr. Moorman on the hotel grounds one day and asked him if he thought he had got enough sulphur into his system to justify his returning home. The doctor took the patient's hand, rubbed the back of the hand, smelled it and then pronounced the opinion that his body was well supplied. The man then asked, "What do I owe you for this examination?" and the doctor answered, "Ten dollars."

However, Dr. Moorman showed that it is a mistake to judge the value of a sulphur water merely from its taste or smell. The mere fact that sulphuretted hydrogen is present is not in itself sufficient evidence that it is a valuable remedial agent. The fact that the deposits about sulphur springs are of different colors, blue, red, yellow, black or white, was attributed by him to the influence of light and shade or chemical changes; he did not know, of course, that these changes are due chiefly to bacterial action.

Dr. Moorman had a drug store in the town of Salem, Virginia, where you could buy a stick of blue mass or a pound of salts. It was the conventional, but now obsolete, apothecary's shop.

It is related that sometimes the old doctor would throw a handful of pennies to a crowd of boys for the fun of seeing them scramble for them.

Judge Hager, of Ashland, Kentucky, told me about his father, Mr. Samuel Patton Hager, of Paintsville, a patient of Dr. Moorman's, who for years had lived methodically and was conservative as to his diet, eating no fatty food. Nevertheless, he was a very spare man and suffered from some form of stomach trouble, like chronic dyspepsia. In 1870, he sought relief at White Sulphur Springs and returned for six annual summer visits. When he had reached the age of forty-two his physician had told him he had only six years to live; but instead of dying, as expected, he lived to be ninety-two and was then cut short by an attack of pneumonia in 1926.

In 1832, Dr. Moorman was appointed by President Andrew Jackson on the Board of Visitors to the United States Military Academy at West Point.

From 1833 to 1835, Dr. Moorman served for two terms in the Virginia House of Delegates representing Rockingham County, and for forty-five years he was an elder in the Presbyterian Church.

One of the signal honors that came to him was his appointment by President Millard Fillmore as United States Commissioner from Virginia to the World's Fair held in 1851 at the Crystal Palace in Hyde Park, London. This was the first international exposition and it attracted world-wide interest. In that same year, while in London, Dr. Moorman attended the first Fourth of July celebration held in England. It was at the invitation of Mr. George Peabody. This distinguished philanthropist, an American banker for a long time resident in London, had recently given $15,000.00 for the improvement of the United States exhibit and he inaugurated the Fourth of July receptions which have been continued ever since. At this reception there were a thousand guests, including the Duke of Wellington, the Iron Duke, then in his eighty-second year, and all joined in paying honor to our flag.

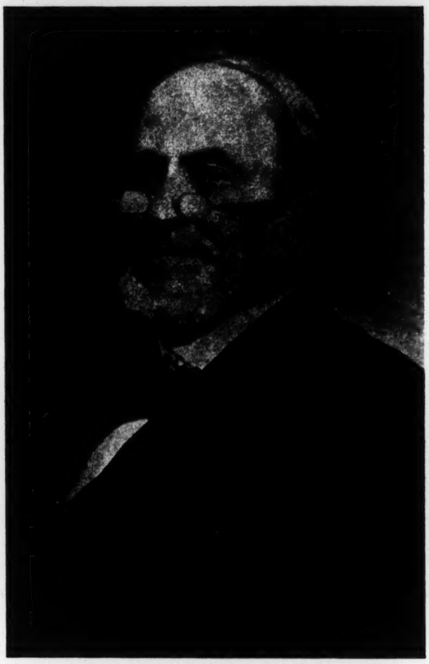

FIG. 1. JOHN JENNINGS MOORMAN (1802-1885).

After traveling in England and spending some time in Harrogate, Dr. Moorman crossed to the Continent and visited many of the cities and famous spas of Europe.

To go abroad in those days was a

notable undertaking and a mark of distinction forever after.

Dr. Moorman in his memoirs, the manuscript of which has been preserved by his family, wrote in detail of his various experiences in England and on the Continent. In another volume he gives the most interesting account of some of the personages who visited White Sulphur Springs during his forty years of residence there. All of these, young and old, were his friends and many, no doubt, were patients. They included Presidents Polk and Tyler, Daniel Webster, Henry Clay and John C. Calhoun, besides many foreign ambassadors and distinguished citizens from all parts of the country.

There was great rivalry and sectional feeling was not altogether disguised. It was said that when John C. Calhoun, of South Carolina and Henry Clay, of Kentucky, planned their visits to the springs and the dates should happen to coincide one or the other would soon leave. However, George Peabody, of Massachusetts, the well-known philanthropist, and W. W. Corcoran, the great art collector, of Washington, were always welcome guests and friends of Dr. Moorman's.

Dr. Moorman named his second son Robert Bruce and in due time sent him to Williams College at Williamstown, Mass., where he was graduated in 1856, in the same class with James A. Garfield, of Ohio. Those college boys had all the firm attachments of youth, little dreaming that one as Captain Moorman and the other as General Garfield should oppose each other in four years of bitter conflict; nor did Garfield dream that he would some day be President Garfield and meet a tragic death.

Captain Robert Bruce Moorman's daughter, Mrs. Bruce Buford, is still living in Roanoke and has kindly furnished data for this sketch of her grandfather. She has described to me her visit to White Sulphur Springs in 1867, when her grandfather took her to call on General Robert E. Lee in his cottage on the grounds. Lee's fondness for children was one of the beautiful features of his character.

Dr. Moorman was not only a good doctor but a good writer and valued instructor. He was Professor of Hygiene in Roanoke College from 1872 to 1879. He was also Professor of Medical Jurisprudence and Hygiene in Washington University School of Medicine at Baltimore. This school was merged in 1877 with the College of Physicians and Surgeons in that city. He was a member of the Medico-Chirurgical Society of Maryland and of the Baltimore Medical Association. It was during his professorship in Baltimore that the students gave him the title of "Old Punctuality."

Dr. Moorman must have been a successful man for we know that in 1871, just two years before the frightful panic of 1873, he organized the Farmers' Bank of Salem, and was its first president. The bank still exists; it has weathered every storm and has never failed to pay its regular dividend. That is more than can be said of many of the banks in other parts of the country.

Like strong characters of his day, Dr. Moorman was not averse to having a controversy; it was with Dr. William Burke, physician to the Red Sulphur and Rockbridge Alum Springs, neighboring resorts of great prominence in the early days. This was given due attention in their respective publications.*

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* Burke's work on the Virginia Springs was published, second edition, in 1853.

Burke's book is very entertaining as it is enlivened by poetry and many classical quotations. We find here a fantastic and amusing poem by Francis Scott Key, published in 1850, entitled "The Red Sulphur Bear." Burke published a great many letters from patrons of the springs and quotes the opinions of his contemporaries, Dr. Thomas Goode, of Hot Springs, Dr. Brockenbrough of Warm Springs, and others. It was Goode who owned Hot Springs just as Burke owned the Red Sulphur Springs, so that the rivalry between them and Dr. Moorman was not altogether on purely scientific lines.

Looking at the works of Moorman and Burke one is immediately impressed with the changes in popularity of the various springs. Many that were the scenes of the greatest gayety fifty to a hundred years ago are now wholly deserted and abandoned. Among these are the old Sweet Springs, the Blue Sulphur, Yellow Sulphur, Red Suphur, the Warm Springs of Virginia, Healing Springs, Bath Alum Springs, the Ohio White Sulphur Springs and many others whose names are only of the past. Most of the springs are still flowing and primitive baths are about all that is left.

The explanation probably lies principally in the great expense attached to the building, equipment and maintenance of a modern spa, with the result that the survivors are growing fewer in number and must give way to those which are able to meet the demands of the enlightened and sophisticated clientele of the present day.

Doctor Moorman's conception of the action of mineral waters was stated as follows:

> Mineral waters are evidently absorbed; they enter into the circulation and change the consistency as well as the composition of the fluids; they course through the system and apply the medicinal materials which they hold in solution, in the most minute form of subdivision that can be conceived, to the diseased surfaces and tissues; they reach and search the most minute ramifications of the capillaries, and remove the morbid condition of those vessels which are so frequently the primary seats of disease. It is thus that they relieve chronic disordered action, and impart natural energy and elasticity to vessels that have been distended either by inflammation or congestion, while they communicate an energy to the muscular fibre and to the animal tissues generally, which is not witnessed from the administration of ordinary remedies. Mineral waters also dissolve many pathological and morbific materials which are more readily eliminated from the body. They also act on the nervous system, regulating and stimulating important blood forming centers whose abnormal action is often the primary cause of deleterious changes in the blood itself. The waters are also serviceable as simple diluents, washing out the gastro-intestinal tract, diluting the different fluids of the body, and serving as vehicles of waste products, besides having their own tonic action.

There was a different mental attitude fifty or a hundred years ago as regards mineral waters, the materia medica and many features of the medical art. To put it in a nut shell, it was faith. Anything derived from the deeper parts of the earth's crust must have some mysterious potency so that long and painful pilgrimages were made to the fountain that would heal. Dr. Moorman himself sometimes came even in mid-winter to the springs seeking their benefit. His instructions to patients were given with the most particular care. The druggist, for example, was instructed when making a calomel powder to triturate it for two hours; such prescriptions are still preserved.

Although the resources of the doctor of the last century were limited, he was self-reliant, a good observer, and abounded in courage and faith. With his Gray, Erichsen's Surgery, George B. Wood's "Practice of Medicine," and Dunglison's "Materia Medica," he felt fully armed for battle with the world. There were no textbooks on neurology, bacteriology or ophthalmology to help him; no *x*-ray laboratory, vaccines or synthetic drugs, but he knew the few he had. The chemical analysis of mineral waters was a great source of income to the chemists of that day and great store was set on fractions of a grain to the tenth, hundredth and thousandth decimal place. Waters must be taken at the spring; there were scarcely any bottled waters and, of course, the dictum, the fresher the better, was right.

I would love to have heard Dr. Moorman's lectures on hygiene; no doubt they were full of practical and sensible advice, as useful today as they were in the 1850's. Still more I should like to be able to watch him as he might listen to a lecture on present-day chemistry or pathology. *Tempora mutantur et mutamus in illis.*

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MEN AND EVENTS IN THE HISTORY OF THE PHILADELPHIA PATHOLOGICAL SOCIETY*

By DAVID RIESMAN, M.D., SC.D.

PHILADELPHIA

THE last act of that extraordinary screen play "Cavalcade" portrays the decadence, the moral disintegration of present-day society. Weariness, hopelessness, bitterness, futility, sexual abandon,—all are shown realistically but with restraint—the understatement hovers over this final scene as over the entire marvelous performance. When I saw it I wondered how far the spirit of 1930 might have gone in its sweep and whether medicine had been touched by it. In science there is certainly some evidence of its influence. The protagonists of modern physics are losing themselves in the sterile field of metaphysics. The statesman is looking through a glass darkly, without vision. What about medicine? That is the question I asked myself. Are there here too signs of decadence, of a tendency to unfruitful speculation such as characterizes astrophysics today and such as prevailed in medicine during the brief romantic period of the early nineteenth century? To this disturbing question I found, I think, an answer in the *Transactions and Proceedings of the Philadelphia Pathological Society*. In reading the *Transactions* over I came to the comforting conclusion that during the seventy-five years of the existence of our Society medicine had not deteriorated but had gone on steadily, clear-eyed, toward its goal, the understanding of disease and of the means of preventing and curing it.

We have met tonight to celebrate the seventy-fifth anniversary of the Pathological Society. Seventy-five years of sustained activity on the part of a medical organization is no mean achievement. While mankind may little heed our celebration we ourselves shall be benefitted and inspired by looking back over three-fourths of a century's scientific work. We are not the most venerable medical society in Philadelphia, for we have three older sisters, the College of Physicians, the Northern Medical Association and the County Medical Society. Many are of the belief that our Pathological Society was the first in Philadelphia, but such is not the case. A pathological society existed in this city as early as 1839. The *American Medical Intelligencer** contains the following announcement:

> THE PHILADELPHIA PATHOLOGICAL SOCIETY
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> A society under this title has been recently established in this city. Its objects are—the exhibition of specimens of morbid anatomy, met with in hospital or private practice, and the collection and preservation of these specimens in a museum of pathological anatomy. The society is already in esse, and holds weekly meetings. Its officers are: W. W. Gerhard, M.D., President; C. W. Pennock, M.D. and T. Stewardson, Jr., M.D., Vice Presidents; Geo. W. Norris, M.D., Secretary; Edward Peace, M.D., Treasurer; and Paul B. Goddard, M.D., W. Pepper, M.D., and B. F. Hardy, M.D., Curators.

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* Vol. 3, 1839.

* Address delivered at the 75th Anniversary of the Philadelphia Pathological Society, March 9, 1933.

Instituted and supported by individuals so competent and zealous as the gentlemen mentioned, and their coadjutors, the society cannot fail to be conducted with spirit, and to tend to the advancement of the pathological knowledge,—one of the elements of sound therapeutics, which, after all, is the great object of medicine.

The interest of Dr. Gerhard, the Society's first President, in pathology was the outgrowth of his studies in Paris under the great Louis. As is well known, Gerhard established in 1836, shortly after his return to America, once and for all the anatomic differences between typhus and typhoid fever. He was undoubtedly the greatest American exponent of the new scientific methods of France, then deservedly in the ascendant. Large groups of students attended his lectures at the Blockley Hospital; 261 were registered at one time for the course. That the students were satisfied with the instruction they received at his hands is indicated in a set of resolutions adopted by them in 1841 and published in the *American Medical Intelligencer*. These resolutions are as follows:

A portion of the medical class of the University of Pennsylvania, who have attended the lectures at the Philadelphia Hospital, being desirous of expressing their sense of the value and importance of clinical instruction, and of their obligations to Dr. W. W. Gerhard, for the able course of lectures delivered by him at that institution during the present session, have met together for that purpose; therefore,

Resolved. 1st. That we consider clinical instruction the most important method of teaching the pathological states of the system, and of familiarizing the mind of the student with the means of correcting the aberrations from the standard of health.

2d. That we consider the course of lectures now being delivered on clinical medicine, at the Philadelphia Hospital, of great value, particularly because of the truly scientific as well as practical manner, in which diseases, involved in much obscurity, are elucidated.

3d. That we consider Dr. Gerhard eminently qualified to give instruction in clinical medicine and pathological anatomy, and that we particularly admire his unequaled skill in illustrating the diseases of the thoracic viscera.

4th. That a committee of ten be appointed to present a copy of these resolutions to Dr. Gerhard, and to tender him our thanks for the zeal and ability which he has manifested in the interests of the class.

5th. That these resolutions be signed by the chairman and secretary, and that a copy of them be presented to the Faculty through their Dean.

6th. That a copy of these resolutions be also sent to the Medical Journals and newspapers of this city, with a request that they publish them.

The committee appointed under the fourth resolution, consists of the following gentlemen: Drs. C. Quarles and R. Kownslar, and Messrs. T. B. Lamar, M. A. Page, T. R. Spencer, W. H. Van Buren, Allen Gunn, H. Selden, T. L. Walker, and J. R. Justice—on motion the chairman was added to the committee.

J. A. Pleasants, M.D., Chairman
L. S. Joynes, M.D., Secretary

At the annual election on October 15, 1842, the following officers were elected:

President, Nathaniel Chapman, M.D.
Vice Presidents, Jacob Randolph, M.D., Samuel George Morton, M.D., Charles D. Meigs, M.D.
Secretary, Thomas Stewardson, M.D.
Treasurer, George W. Norris, M.D.
Curator, Edward Hartshorne, M.D.

As this was the last election of which I have been able to find any record, it is likely that the Society went out of existence in 1843.

It would seem that four pathological societies antedate our own. The oldest of all is the Societé anatomique of Paris. It was originally founded on the 12th Frimaire in the year XII (December 3, 1803) by Dupuytren, but passed out of existence for lack of support five years later, Laënnec being its last President. On January 12, 1826, the Society was reconstituted under the presidency of Cruveillier, although the first volume of its Bulletins did not appear until fifteen years later. The Societé anatomique may thus lay claim to being the oldest pathological society in the world. The next in order is the Dublin Pathological Society, founded in 1839. Among its active members was the famous William Stokes of Adams-Stokes disease. It seems to have died in 1882. The New York Pathological Society was established in 1844 and the London Pathological Society in 1846; the latter since 1907 has been a Section of the Royal Society of Medicine.*

The second Pathological Society of Philadelphia, our own, had its beginning on September 29, 1857, when a group of twenty-seven gentlemen, most of them then or afterwards distinguished, met in the home of Dr. J. M. Da Costa, at 212 S. 11th Street, and organized the Pathological Society of Philadelphia.† The first actual meeting was held on October 14, 1857. A Constitution was then adopted and the following officers elected:

President, Dr. S. D. Gross
Vice-Presidents, Drs. René La Roche and
Alfred Stillé
Treasurer, Dr. Addinell Hewson
Secretary, Dr. J. M. Da Costa
Assistant Secretary, Dr. T. G. Morton

The first presentation at this inaugural meeting was made by Dr. S. Weir Mitchell. It was a fatty liver from a child five and one-half years old. The fatty nature was not only visible to the naked eye but Mitchell had proved it by means of the microscope.

The meetings of the Society, through the courtesy of the Managers of the Pennsylvania Hospital, were held in the famous Picture House which was also for a time the meeting place of the American Historical Society. During the Civil War this choice of meeting place proved of great importance, because it was largely through the Staff of the Pennsylvania Hospital that the continuity of the Society, threatened by the absence of so many members at the Front, was maintained. After 1867 the meetings were held in the College of Physicians at 13th and Locust Streets, and it was there in the intimate downstairs room with its hard, wooden benches, that my membership began in 1894. In 1909 the Society moved to the palatial new home of the College, where it now meets. On occasion it has met in some of the hospitals of the city, in the Zoological Garden, and in joint session with the New York Pathological Society both here and in New York City.

The semi-centennial anniversary of the Society was celebrated on May 9,

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* The Chicago Pathological Society as such dates from 1881.

† It is curious that there is no reference whatever in the *Proceedings* to the earlier pathological society, although Gerhard and Stillé were members of both.

10 and 11, 1907, with appropriate ceremonies. The banquet was made memorable by a delightful response to a toast by Dr. S. Weir Mitchell, who was then one of the two original members still living. The other, Dr. James Darrach, was too enfeebled by age to attend. Dr. Mitchell also read a clever poem. There were three notable memorial addresses by Frederick G. Novy, Alonzo E. Taylor and Simon Flexner, which together with several other papers were published for the Society by the *Journal of Medical Research* in Boston.

Aside from the American Philosophical Society and the College of Physicians, the Pathological Society has had the most distinguished history of any of the medical or scientific organizations in this city. The majority of its presidents—there have been forty-three in all—have been men who played a conspicuous role in American medicine.

Its first president, Samuel D. Gross, was also the first real pathologist in this country. He was born near Easton, Pa., in 1805, and was graduated from Jefferson Medical College in 1828. While waiting for practice he translated books from the French and the German. At the age of twenty-five, two years after graduation, he wrote his first work, "A Treatise on the Anatomy, Physiology and Diseases of the Bones and Joints." When twenty-eight years old he was called to Cincinnati as Demonstrator of Anatomy in the Medical College of Ohio. Two years later he was appointed to the Chair of Pathological Anatomy in the same school, devoting himself to dissections, reading, and visits to the slaughter houses of Cincinnati. He acquired sufficient knowledge to write his "Elements of Pathological Anatomy" in two octavo volumes of upwards of 500 pages each. It was the first systematic work upon the subject published in the English language. One of the greatest compliments Gross ever had came to him through this book, for at a dinner given in his honor by Virchow in Berlin in 1868, his host suddenly and without any warning drew forth a large volume from under the table and rising took Dr. Gross by the hand and made him an eloquent address, complimenting him upon his labors as a pathological anatomist and referred to the work, which happened to be the second edition of the "Elements of Pathological Anatomy," as one from which he had derived much useful instruction and pleasure.

In 1840 Gross assumed the Professorship of Surgery in the Louisville Institute, afterwards the University of Louisville, where he had among his colleagues Daniel Drake, Charles Caldwell, John Esten Cook and Jedediah Cobb. His first class in Louisville numbered 204 which was eventually increased to 406, the largest number it ever had. Owing to a crisis in the medical school of Louisville, Gross accepted the offer of the Chair of Surgery in the city of New York, succeeding Valentine Mott. Though he enjoyed his life in New York, he found that the University of New York was unpopular with the local profession and the College edifice ill-adapted to its object; moreover, living and rents were exorbitantly high. These and other causes led him to tender his resignation and to resume his Chair in the University of Louisville. During his stay in Louisville, which covered the sixteen years from 1840 to 1856, he wrote many books and papers. His fame had spread so rapidly that he was asked to take the Chair of Surgery in the University of Pennsylvania. He declined and at the request of Dr. D. Hayes Agnew wrote a warm testimonial in favor of Dr. Henry H. Smith, who was elected. Finally, a call came to him from his Alma Mater which he accepted; he gave his first lecture in Philadelphia on September 30, 1856. At the outbreak of the Civil War he wrote a brief manual of military surgery which was used extensively in both armies and was later translated into Japanese and published at Tokyo. His monumental work is his "System of Surgery" which went through six editions.

Gross was deeply interested in medical history and wrote numerous articles and books, among them the Life of Daniel Drake, John Syng Dorsey, Valentine Mott, Robley Dunglison, Ambroise Paré and others. It is remarkable how much he accomplished in a literary way considering that he was both a busy practitioner and an active teacher. As he himself said, his genius was the genius of industry, perseverance and common sense. He was a member of innumerable medical societies both here and abroad and had many academic honors.

I should like to talk about all of the Presidents but it seems to me better if I confine myself, with the exception of Dr. Samuel D. Gross, to those presiding officers no longer living with whom I was personally acquainted.

The third President, and the first one I knew, was Dr. Alfred Stillé. In the beginning the president was chosen for one year, but with Dr. Stillé the practice was changed for he was reelected at the end of his term. Being, however, a great stickler for the proprieties, he declined the first reelection, but he was afterwards prevailed upon to accept and served two other terms. I came in touch with Dr. Stillé in his declining years through my membership in the Stillé Medical Society, an undergraduate organization in the Medical School of the University of Pennsylvania. Stillé entered Yale College, from which however he was expelled by reason of his having joined the "conic section" rebellion at Yale which led to the retirement of one-half of the class. He attended the brilliant lectures on anatomy by Dr. Granville Sharpe Pattison at Jefferson College but was graduated from the University of Pennsylvania in 1832. In 1835–36 he was house physician at Blockley, under W. W. Gerhard, who had just returned from Paris. Stillé also came under the influence of Dr. Pennock, who was associated with Gerhard. He says: "No doubt Gerhard was the more intellectual man but Pennock was the nobler of the two." Attracted by the great French school, Stillé became one of the large band of Americans who studied in Paris under Louis. His investigations on cholera and on epidemic cerebrospinal meningitis subsequently made at the Philadelphia General Hospital belong to the classics of the prebacteriologic era. As a sample of his style and perspicacity I shall quote from a presentation made before the first Pathological Society on December 30, 1839. After presenting a case of rheumatism with endopericarditis, pleurisy and double pneumonia, Stillé concludes as follows:

> We are shown by the history of this case, that diseases, apparently unimportant in themselves, are not, on that account, to be lightly examined, or

treated carelessly. We should always keep in view, not only the affection itself, but also its tendencies; remembering "how great a flame a little fire kindleth." In this instance a slight attack of a disease more regarded commonly for the transient pain it inflicts, than for the permanent injury it entails, was the first small link in a chain, which at last fettered and destroyed a young and vigorous life.

The fifth president, Dr. J. M. Da Costa, who served for three years, is remembered by many of the older physicians. A month ago, on February 7, occurred the one hundredth anniversary of his birth on the Island of St. Thomas in the West Indies. Da Costa studied in Dresden, Vienna and Paris; the last named city at that time contained a wonderful group of men from whom Da Costa obtained much of his encyclopedic knowledge of medicine. Among these great personalities were Duchenne, Nélaton, Ricord, Broca, Velpeau and Trousseau. It would be difficult to find anywhere at any time a finer group.

Da Costa was the first Secretary of the Pathological Society. His presentations were numerous and always couched in flawless English. At an early meeting he reported a case of primary cancer of the pancreas and noted that the gall bladder was fully distended with bile. A few months later he read an exhaustive paper on the same subject based on a study of 37 cases from the world's literature and included one of his own. He unfortunately did not realize the significance of the distended gall bladder, otherwise we should speak of Da Costa's instead of Courvoisier's law. Dr. J. H. Packard credits him with having been the first to demonstrate experimentally that the change of the liver in yellow fever was due to fatty and not to amyloid degeneration. In discussing apoplexy of the lung in connection with disease of the mitral valve, Da Costa states that he did not believe that pulmonary apoplexy was either of necessity produced by, or connected with external pulmonary hemorrhage. He uses the term nodular apoplexy of the lung, evidently referring to what we now call hemorrhagic infarction. His famous study on the "Irritable Heart of Soldiers" is a classic known everywhere; it anticipated the neurocirculatory asthenia of the Great War.

In 1880, two years before the discovery of the tubercle bacillus, Da Costa made the following statement at a meeting of the Society:

> I believe then that pneumonic phthisis is a tubercular pneumonia and that the inflammation is tubercular from the outset or has acquired a tubercular nature through changes in the cell life which we do not understand.

At the Conversational Meeting on October 27, 1892, he read his well-known essay entitled "The Albuminuria and the Bright's Disease of Uric Acid and Oxaluria." Dr. Da Costa died of angina pectoris in 1900.

Dr. Da Costa was succeeded in the presidency by Dr. John H. Packard, whose fine, sensitive face surrounded by a straggling greyish-black beard is readily recalled by those who knew him. Dr. Packard was one of the most active men in the Society. He was a member of the Committee on Morbid Growths and made numerous presentations and read several important papers. I should like to refer briefly to one on pyemia read before the Society October 26, 1859. In this paper he attempts to explain the occurrence of suppuration at a distance from the primary seat, such as after amputation or injury. It is like a view from another planet. The idea that germs or living organisms might play a part is not even dreamt of, and in consequence Packard has to take refuge in a variety of theories that seem fantastic from our point of view. After reviewing the literature including the writings of Ambroise Paré, he comes to the conclusion that secondary suppuration after surgical operations, injuries or local inflammations is due to a purulent or pyogenic diathesis. He writes:

> The idea which I have sought to defend —that such abscesses occurring after injury or operations are due to a pyogenic diathesis, this being a state of system not without analogy under other circumstances—is I think a new one. If tenable, it may afford a sounder basis for prophylactic or curative measures than those which have preceded it, and in this way it may be made practically useful.

Dr. Woodward in discussion agreed with what Dr. Packard had said with regard to the extreme difficulty of determining the existence of pus in the blood as seen under the microscope owing to the impossibility of discriminating between pus corpuscles and the white corpuscles of the blood; still in a case where these corpuscles are abnormally abundant, we can at least say that one of two conditions must be present: either the patient, from whom the blood has been drawn, is suffering from leukemia, or there is pus mixed with the blood. Dr. Woodward also spoke of the readiness with which under certain conditions pus might enter the circulation.

Dr. Henry Hartshorne with an approach to the true explanation observed that although the secretion of pus in organs distant from the seat of injury might often be owing to purely diathetic influences, without any distinct connection existing between the secreting centers, as suggested by Dr. Packard, still there were cases, and he instanced two as having fallen under his own observation, in which the neighboring lymphatics had become red and hard, first at the seat of injury, and in which this induration and redness had rapidly traveled along the course of the lymphatic vessels to a distant gland, which had suppurated. Such cases, he thought, must at least be allowed to be owing to continuous inflammation, if not to the direct conveyance of the pus from one suppurating center to the other by means of the lymphatic vessel.

Packard was followed by a man whose fame probably exceeds that of any physician in the history of Philadelphia, S. Weir Mitchell. Mitchell was not only the first in the history of the Society to present a specimen but he was also a frequent contributor to its meetings, discussing all sorts of subjects in clinical medicine but showing eventually that his main interest lay in the field of nervous diseases.

Dr. Mitchell was born in Philadelphia and was a collateral descendant of Dr. John Kearsley of Colonial fame. Although a graduate of Jefferson Medical College, where his father was professor, he was closely identified throughout nearly all his mature life with the University of Pennsylvania. His scientific work during the Civil War culminated in the great monograph prepared with Moorehouse and Keen on "Gunshot Wounds of the Nerves," which laid the foundation of his fame as a neurologist and investigator. As already stated, he made the first presentation in the history of the Pathological Society and for many years took active part in its deliberations. Although he had resigned several years before, he participated in the semicentennial celebration in 1907.

Mitchell's experimental work took a wide range: on the cerebellum, on the respiration of turtles, on snake venom, etc. It was under his inspiration that Simon Flexner and Hideyo Noguchi did their well-known researches on the nature of snake poison. Mitchell's contributions to neurology and to therapeutics—the Rest Cure—were epoch-making. In the midst of a busy practice and scientific work he found time to write a number of historical novels and many poems and addresses. In the College of Physicians his influence was paramount and much of the dignity which other cities find to encompass medical life in Philadelphia is due to his example. He died of pneumonia on January 4, 1914.

John Ashhurst, Jr., succeeded S. Weir Mitchell in 1870. As a teacher of surgery, as a diagnostician, and as an author of surgical works, Ashhurst has had few equals in this country. His presentations were scholarly and like those of Da Costa interlarded with references to the European literature. It is not generally known that he had a sense of humor; true, it was a little heavy and pedantic and became manifest only on rare occasions. His judgments were severe and not tempered with mercy. This showed itself especially in his reviews of the surgical works of others which he wrote for many years for *The American Journal of the Medical Sciences.*

In 1873 choice fell on William Pepper whose father had been one of the curators of the earlier pathological society. William Pepper, Secundus, began his life in our own Society in the same modest office, that of curator. He was born in 1843, was graduated from the University of Pennsylvania in 1864, and became resident physician in the Pennsylvania Hospital in 1865. Subsequently he was elected pathologist and curator of the hospital's museum. Pepper was always deeply interested in pathology and taught it at the University of Pennsylvania. At the Philadelphia General Hospital he gave courses in practical medicine with H. C. Wood, Pepper meeting his classes at eight o'clock on Tuesday mornings. He was the first to notice the pigment in the blood and organs in malaria and with a better microscope might have been the discoverer of the malarial parasite fifteen years before Laveran.

One of the most important Philadelphia contributions to pathology was Pepper's discovery in 1875 of the red bone marrow in pernicious anemia. The Germans have claimed priority in this discovery for the great pathologist Julius Cohnheim, who described the condition and considered it a definite etiologic factor in pernicious anemia in 1877. There can be but little doubt that Cohnheim was unaware of Pepper's observation, nevertheless if priority is a matter of chronology, the honor of discovery belongs to William Pepper. Pepper's contributions to the Society number 84. In the 1870 edition of the famous textbook of "Diseases of Children," written by Pepper in association with J. F. Meigs, is to be found the best description up to that date of perforation of the appendix.

Pepper frequently served on the

Committee of Morbid Growths, which in the early days was not a standing committee but was appointed as the occasion warranted. On November 22, 1865, he made the following report:

> In presenting to the Society this report upon the tumour referred to me at the last meeting, I think it but fair to say that, excepting as regards its general characters and the general considerations springing from them, it is not worthy of being held to be conclusive. The changes produced in the relative consistence, in the colour, in the amount of granular debris, in the size of the cells and the appearance of their contents, are so great and so uncertain that, so far as the microscopic examination is concerned, I offer the results with great diffidence.

Although Pepper was then in the first flush of youth as physician, he showed a restraint and modesty that are not as common today as they might be. As a specimen of Pepper's style and of his keen mentality I will quote a report on a case of aneurysm of the left middle cerebral artery with partial right hemiplegia and aphasia:

> As the lesion was limited to the anterior half of the left hemisphere and to the motor portion of this side, the cineritious substance being quite healthy, it may be regarded as a case confirming the localization of voluntary speech in the left hemisphere. The preservation of consciousness, intelligence and volition shows also that the lesion in aphasia is not of the intellectual portions of the brain but in the central motor nucleus through which the mental concepts must be transmitted to be formed into words. In accordance with this we find in this case the lesion limited to the motor tract of the left hemisphere.

These observations of Pepper show that he was familiar with the comparatively recent researches of Paul Broca on cerebral localization.

William Pepper was one of the most versatile men in American history. Besides being a physician he was an educator, an organizer, a public-spirited citizen, and when he died the *Public Ledger* said of him that he had "done the work of a dozen men." I had the honor with Dr. A. C. Abbott and the late Dr. F. A. Packard to be on the Committee of the Pathological Society to draw up resolutions on Dr. Pepper's death.

James Tyson, the thirteenth president, is remembered by the majority of Philadelphia physicians, for he lived until 1919. Born in 1841 of German ancestry, Dr. Tyson was graduated from Haverford College in 1860 and from the Medical Department of the University in 1863. He began early to exhibit an interest in pathology and was one of the first in the city to use the microscope regularly. In 1866 he was appointed microscopist and in 1870 pathologist to the Philadelphia General Hospital. Although his interest in pathology continued throughout his life (he came near being made Professor of Pathology in the University of Pennsylvania) his contributions to the science are few.

His successor as President in 1884 was E. O. Shakespeare, a descendant of Edmund Shakespeare, one of the brothers of the poet. Although by training an ophthalmologist, he was an able bacteriologist and expert sanitarian. He was a co-discoverer with Dr. Louis Taylor of Wilkes-Barre of the cause of the fearful outbreak of typhoid fever at Plymouth in the Wyoming Valley. His monumental work on cholera prepared for the United States Government will always remain a landmark in the history of the disease. In the Spanish-American war he was associated with Dr. V. C. Vaughan and Surgeon-General George M. Sternberg, in the investigation of typhoid fever in the military camps. He defended ardently the specificity of the tubercle bacillus against Dr. Formad. When cholera broke out in Hamburg in 1892, and the fear of its importation created somewhat of a panic in this city, Dr. Shakespeare took charge of the quarantine arrangements. It was at that time that I had the honor of becoming his voluntary assistant in the bacteriological laboratory of the Philadelphia General Hospital, where he made his investigations. After his retirement from the presidency in 1885 he undertook at his own expense the publication of the *Proceedings* of the Society, as is mentioned in another place in this article. Dr. Shakespeare died in 1900 at the early age of fifty-four.

Dr. J. C. Wilson, the next president, is fortunately still among the quick.

Dr. F. P. Henry, his successor in 1887, was not a graduate of a Philadelphia school, but nevertheless he rose rapidly in professional honors after his arrival here in 1869. He was a man of broad culture and given to scholarly pursuits. Dr. Henry's contributions were of great importance, particularly those dealing with diseases of the blood. He was the first in this country to call attention to the "tabby mottling" of the heart in pernicious anemia which had been originally noted by Quain. Jointly with Osler he described atrophy of the mucous membrane of the stomach in a case of pernicious anemia. He did not think that the changes in the bone marrow observed by Pepper were of much importance.

It also appears from Dr. Henry's paper on pernicious anemia that Dr. Morris J. Lewis of this city was the first in this country to note the changes in the spinal cord in that disease. The microscopic examination in this case had been made by Dr. Charles W. Burr soon after the condition was described by Lichtheim in Germany.

Henry F. Formad was born in 1847 in the Russian Caucasus. Soon after graduating from Heidelberg he emigrated to this country and entered the University of Pennsylvania from which he received his degree of M.D. in 1877. He afterwards became demonstrator of morbid anatomy in the University, and coroner's physician, and soon acquired a national reputation as a medicolegal expert. His knowledge of morbid anatomy was profound, based as it was on countless autopsies. He was also interested in bacteriology and through a peculiar circumstance acquired an unmerited posthumous fame. It came about as follows:

Formad had contended for the nonspecificity and unimportance of the tubercle bacillus, although pathologists everywhere were being won over to Koch's views. Professor Loeffler in 1907, in an excellent commemorative address on Koch's immortal discovery, mentioned Formad as one of Koch's opponents and passed over in silence all those Americans who had enthusiastically accepted the tubercle bacillus. This reminds me of one of Turgenieff's stories: An art critic had been accustomed to agree with the popular taste in all respects; no one paid any attention to him. He then decided to condemn everything and very soon he was the most noted man in town.

Dr. Formad took an active part in our Society, where his "wet brain" and "pigback kidney" of the alcoholic became popular phrases. His presidency covered two terms, 1889–90. Before he died in 1892 at the early age of forty-five, he had already become a legendary figure in Philadelphia.

Arthur V. Meigs, whose father and grandfather were doctors, was a graduate of the University of Pennsylvania and resident physician and afterwards visiting physician to the Pennsylvania Hospital. A conscientious, ultra-conservative practitioner and a student of pathological problems, he published a number of scientific articles, including several on milk analysis and two books dealing with the diseases of the blood vessels. He was elected president in 1891.

John H. Musser was of German-Swiss descent, the fourth physician in direct line. A graduate of the University of Pennsylvania in 1877, he served as resident physician in the Philadelphia General Hospital and joined our Society in 1880. In 1884 he became pathologist of the Presbyterian Hospital. Musser was a voluminous writer, many of his articles, such as the classical one on "Primary Cancer of the Gall Bladder and Bile Ducts," being based on painstaking pathologic studies. His knowledge of morbid anatomy made him a capable teacher of physical diagnosis and a diagnostician of rare ability and national renown. His energy was prodigious but he spent it recklessly in the pursuit of his calling, and death came to him in the form of angina pectoris at the age of fifty-six.

Frederick A. Packard, elected president in 1899, was one of three sons whose fathers have been presidents of the Society, the others being Samuel W. Gross and O. H. Perry Pepper. He was graduated from the University of Pennsylvania in 1885 with the highest general average. It was my good fortune to have him as chief on the medical service in the Philadelphia General Hospital. During the brief period of our association a friendship sprang up between us that was broken all too soon by Dr. Packard's untimely death in 1902 from typhoid fever. While his deep interest in the Pathological Society and in things pathological was to some extent inherited from his distinguished father, he was additionally inspired by William Osler who inculcated in him that fondness for clinical medicine and pathology that would have made him a second Osler had he lived.

Speaking of Sir William Osler reminds me to say that during his sojourn in Philadelphia, Dr. Osler was one of the most active members of the Society. His presentations, numbering fifty-two, were largely from the autopsy room of the Philadelphia General Hospital. Of all the men connected with the Pathological Society during the last fifty years, his influence must be reckoned as the most significant. He held only one office, that of fourth Vice President, to which he was elected in 1887.

W. M. L. Coplin was pathologist to the Philadelphia General Hospital for thirty years and for many years professor of pathology in Jefferson Medical College. In addition he held several important public positions, among them that of Director of Health of Philadelphia. He was interested not alone in pathology but also in bacteriology and wrote many papers on both subjects and was the author of a textbook on pathology.

When I joined the Pathological Society there still existed a feeling of antagonism between the two leading schools of Philadelphia. It was next to impossible for a Jefferson graduate to be elected to an office in our Society. This did not seem fair to some of us, and when the election came around we planned to elect Dr. Coplin one of the four vice-presidents. Despite our well-laid plans, at the last moment a particularly loyal Pennsylvania alumnus who was not in the secret, nominated a member of the University Faculty as a fifth candidate. To our chagrin Coplin was defeated, but in the following year our plans did not go awry and thereafter there was never again any friction in the Society.

Allen J. Smith, whose kindly and helpful personality will not be forgotten by those who had the good fortune to know him, was an excellent pathologist and parasitologist. He was called to the University of Texas in 1891 and built the school up from almost nothing to one of the best medical institutions in the South. In 1903 he returned to Philadelphia as Professor of Pathology, in succession to Dr. Simon Flexner. His contributions to pathology were largely in the domain of parasitology; to him belongs the credit of establishing the existence of hookworm disease as endemic in the United States. He was elected president in 1912 and died much lamented in 1926.

Richard Mills Pearce was elected President of the Society in 1913. Born in Montreal in 1874, he was graduated from Harvard Medical School and became a pupil of Councilman. Naturally he was well versed in pathology when he came to the University of Pennsylvania in 1900 as Demonstrator under Dr. Simon Flexner. In 1903 he left Philadelphia and thereafter held important positions in Albany and in New York City. He returned here in 1920 to fill the newly created chair of Research Medicine in the University. During his occupancy of this chair he made important contributions, particularly to our knowledge of the functions of the spleen. In 1923 he became associated with the Rockefeller Foundation and as its Director of Medical Education he did phenomenal work not only in this country but in many distant parts of the world. Richard Pearce exercised a strong and lasting influence in our Society and upon the spirit of research in Philadelphia; by his forthright personality he won the respect of all who came in contact with him.

M. Howard Fussell, elected President in 1915, was one of the most popular practitioners and consultants in Philadelphia. His interest in morbid anatomy was unusually keen and led him to make in nearly all cases of death, both in private and hospital practice, requests for an autopsy, a request seldom denied him. He found like all other conscientious physicians the autopsy table, in the language of D. J. McCarthy, an excellent cure for megalomania. No doubt much of his success as a diagnostician was founded on his knowledge of the pathological changes in disease. Dr. Fussell died of angina pectoris at the age of sixty-six.

Paul A. Lewis, who was elected President of the Society in 1921, was an ideal scientist. Graduated from the University of Pennsylvania in 1904, he held a number of teaching positions until he became a Fellow of the Rockefeller Institute in 1908.

In 1910 he came to Philadelphia as Director of Laboratories of the Henry Phipps Institute, with the title of Assistant Professor of Pathology and later as Professor of Experimental Pathology in the University of Pennsylvania. He also served as Director of the Ayer Clinical Laboratory of the Pennsylvania Hospital. In 1922, he resigned from his positions in Philadelphia to become associate member of the Rockefeller Institute of Animal Pathology at Princeton. In 1929, under the auspices of the International Health Commission, he went to Bahia, Brazil, to investigate the nature of the virus of yellow fever. On June 25 he was stricken with that disease and died on June 30, 1929. Thus for twenty-five years Lewis devoted his best energies to investigations in pathology. He and Auer were the first to fathom the mechanism of anaphylactic death in guinea pigs. His work with Flexner on poliomyelitis in which his part was more than that of a subordinate assistant has become classical. In the Phipps Institute his investigations took a wide range and led to the publication of many important papers on tuberculosis. Until his death Lewis enjoyed the loyal friendship of those who were associated with him in the Pathological Society.

Some very distinguished men were honored by the Society through their election as corresponding members. Austin Flint, elected in 1858, a year after the founding of the Society, was one of the great medical teachers of his time. His name is enshrined in the Flint murmur of aortic insufficiency.

Alonzo Clark, another corresponding member, elected in 1859, introduced the opium treatment of peritonitis which was popular before the days of courageous abdominal surgery. Carl Rokitansky was an Austrian, or rather a Czech, who probably made more autopsies than any other man in history. His contributions to pathology are remarkable in number and quality; he was the first to discover bacteria in malignant endocarditis, the first to differentiate between lobar and lobular pneumonia. It was he who gave the name "acute yellow atrophy of the liver" to the condition he so well described. Unfortunately he could not divest himself of the antiquated humoral theories of crases and dyscrases, the incorporation of which in the first edition of his book gave his younger contemporary Virchow a chance for much caustic criticism.

Rudolph Virchow was elected to corresponding membership in 1898. I need say little about the man who did for pathology what Vesalius did for anatomy. Virchow was a truly great man and like all great men he was many-sided: pathologist, anthropologist, linguist, and editor; as statesman he dared defy the mighty Bismarck. He stands as a unique personality in medical history. In the same year in which the Society elected Virchow it also elected the most beloved American physician of our time to corresponding membership, Dr. William H. Welch. A man of perpetual youth who has always one foot in the historic past and one in the future; a scientist, a scholar, an organizer—we hope that his health will be such that he will be with us for a number of years to come.*

In the beginning of our Society's career the *Transactions* appeared in

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*Dr. Welch did not live very long after these words were uttered. He died in Baltimore on April 30, 1934.

The American Journal of the Medical Sciences; the loose sheets were bound at the end of the year for distribution among the members. The first bound volume, which is now very rare, was issued in 1860 and covers the *Proceedings* from 1857 until the date of publication. With Volume IV in 1874 the Society began to publish its own Transactions. In this volume, Dr. James Tyson being the Recorder, the papers were for the first time arranged in systems after the pattern of the *Transactions of the London Pathological Society*. There was, however, much dissatisfaction with the great delay incident to the publication of an annual volume; it was therefore decided to have the papers and presentations appear more speedily in the form of monthly *Proceedings*. The second volume of this new series is noteworthy for having incorporated in it a general index prepared with great labor by A. E. Taylor, for the twenty volumes previously published from 1860 to 1899, inclusive. It should be mentioned that Dr. E. O. Shakespeare in 1886 undertook at his own expense to publish the *Proceedings* of the Society, although at the time he was not an officer. Dr. Shakespeare's *Proceedings* were printed and issued in Wilmington, Delaware, but ceased at the end of the fifth number. The five numbers together contained only twelve pages of text. Of late years the Society has not issued its *Proceedings* in its own fasciculi but has published its reports in the *Archives of Pathology*.

That the *Proceedings* of the Pathological Society attracted attention abroad is proved by the following incident: During a visit in Europe in 1905 I decided to call on Professor Ehrlich whose laboratory was situated in a suburb of Frankfurt. I sent in my card and within a few moments Professor Ehrlich appeared, gave me a warm but clammy handshake and said, "Oh, you are the Editor of the *Proceedings of the Philadelphia Pathological Society*." As he could not possibly have had time to look this point up, he must have taken notice of the *Proceedings*, the title page of which carried my name as Recorder. I have always looked upon this incident as a great compliment to our Society.

The publications of the Society are a mirror of medical progress during the last seventy-five years. In the first quarter century pathological anatomy under the influence of Virchow's great discoveries dominated the activities of the members. With the discovery of the tubercle bacillus in 1882 a second quarter began which might be called the etiologic era. It must be admitted that the Society was a little slow in realizing the value of these discoveries. Bacteriology (the word itself did not appear in medical literature until late in 1884) received very scant attention until 1887, the year of Volume XIII. Seeing that Davaine in 1850 had demonstrated the anthrax bacillus in the blood of animals suffering from or dead of anthrax, that Pasteur's researches on the decomposition of organic solutions were published in 1860 and that references to his researches had appeared in literature even earlier, it is surprising to find no allusion whatsoever to these observations nor even to the discoveries of Lister, published in 1867, or to those of Klebs, who in 1872, had expressed himself as convinced that the causes of pyemia and septicemia came from without the body. Even as late as 1887 Dr. John Ashhurst, Jr., ridiculed the claims of bacteriologists, and William Hunt, a well-known surgeon of the Pennsylvania Hospital, compared bacteria to the maggots he had seen in wounds during the Civil War. "Did the maggots cause the wounds," he asked derisively. Evidently Philadelphia was passing through an unprogressive, contented era at that time. Some inconsiderate person might even now ask the question: "Has it actually passed through?"

The third quarter covers a much wider range than the first two. We begin to read of chemical and metabolic studies, of investigations of the blood along the fruitful lines we owe to Paul Ehrlich. Bacteriology, protozoology, syphilis, immunology, are represented by many articles. Among the most important original communications in the field of etiology are those of the late Leonard Pearson and of M. P. Ravenel on the transmissibility of tuberculosis.

Today the Society is ready to enter the fourth quarter of the century and under a new sign, whatever it may chance to be called by those who sit down as we are doing tonight to celebrate the first centenary of the Society. Perhaps it will be called the hormonic era.

It was before the Pathological Society that Dr. Henry W. Cattell on February 13, 1896, exhibited the first pictures made with the mysterious ray discovered by a previously unknown German physicist, Wilhelm Conrad Roentgen. Those of us who gazed wide-eyed on the incomprehensible photographs of the bones of the hand, of needles stuck in a piece of liver, of the bones of a mouse, had not the faintest idea of the significance of the discovery. We did not dream that the *x*-ray would rank with anesthesia and with antisepsis as one of the high towers in human progress; that it was destined to reveal the interior of the body during life, to be a curative agent of immense power, and an open sesame to the hidden structure of matter. It is interesting that in the discussion the prediction was ventured that it might eventually be possible to make pictures in three or four minutes and that a proper *x*-ray outfit would probably cost $50. The fact is worth mentioning that Professor Goodspeed of the University of Pennsylvania was the first to carry out experiments with the *x*-ray in this country.

One of the most delightful features of the Pathological Society prior to the Great War was the Annual Conversational Meeting. At these meetings, at first there were two a year, in later years one, an invited guest or a member on invitation read a significant paper which in the earlier days was always freely discussed. Later there was no discussion but a reception to the speaker followed. I still recall the first Conversational Meeting I attended. It was before I had achieved membership in the Society. My late friend Dr. Louis Jurist had invited me to accompany him. He called for me, but as I was leaving the house a man came with a note from the Northern Dispensary, to which I had just been elected, requesting me to see his wife on Ogden Street near 11th Street. I wanted to go at once, it was my very first call, but Dr. Jurist after a few words with the husband concluded that the case was not an urgent one and insisted that I go with him. The speaker of the evening was Dr. John Guiteras. I listened with a divided mind to his address on Yellow Fever and reluctantly went to the

University Club to pay my respects to my teacher in pathology. Unable to find peace I decided to leave. Dr. Jurist went with me to Ogden Street. I found the patient sitting at a table drinking beer. When I asked her what troubled her, she told me that her head itched. A quick glance showed that the hair was inhabited by a multitude of tiny greyish denizens. You can imagine my feelings.

An important annual event in the Society's life is the presentation of the William Wood Gerhard medal. This was established at the suggestion of Dr. E. B. Krumbhaar by the descendants of Dr. Gerhard who as already mentioned was the first president of the earlier Pathological Society. It was fitting that the first recipient of the medal should be William H. Welch whose address on the occasion of the presentation was appropriately on typhoid fever. The address was a masterly effort, unusual in its command of the history of the subject as well as in the exhibition of a well-nigh unequaled memory.

There has been a tendency during the last two decades to subordinate or even to ignore morbid anatomy as a discipline in medical schools and hospitals. Students seem to be indifferent to it and hospital internes do not attend autopsies as diligently as in an earlier day. During my residentship, when the indiscriminatingly bibulous Louis the Frenchman went through the corridors of the Philadelphia General Hospital calling "Post, Doctor," we all rushed to the autopsy room to watch Dr. Guiteras or Dr. McFarland perform an autopsy. This "pathological" eagerness continued for a score of years and then gradually disappeared. What are the reasons? One is that the majority of present-day pathologists are not greatly interested in clinical medicine and but rarely in physical diagnosis. They are therefore much less likely to associate the lesions found with the symptoms and signs during life. A second reason is the growing importance of biological chemistry. This prodigious science gives us an ever-increasing insight into normal and pathological physiology and appears to many to render pathological anatomy superfluous. A similar attitude is created by the third factor, namely, the *x*-ray. Unquestionably we are able to ascertain many anatomic facts by this means during life, and this causes the student to think that it needs no pathologist to come from the dead-house to tell him what he already knows. Notwithstanding these advantages I feel after an early training in pathology and after many years of teaching and practice and observation that no one can become a competent diagnostician who does not test his skill either at the operating or at the post-mortem table. Pathology it seems to me is still the best portal of entry into clinical medicine. Without it physiologic thinking, the best basis for understanding the processes and the course of disease, is impossible. That is why I hope that the Pathological Society while advancing with the times into the biochemical, hormonic and allergic fields will not depart entirely from the principles laid down by its founders, namely, to cultivate morbid anatomy.

I cannot help feeling a sense of regret that we of today, at least in this country, set so little store by a good literary style. Reading over the early volumes of our Society's *Transactions* gave me keen pleasure, for even a trivial report is couched in polished English. What is the reason for this decline in taste observed in our medical journals and in the examination papers and histories prepared by students and internes? There is a distinct difference between an article in an English medical journal and, barring rare exceptions, an article in an American journal of corresponding dignity. The same difference is noticeable in our earlier and later *Transactions*.

There are no doubt many causes for the decadence in style, but one stands out preeminent: the neglect of the teaching of good English in the primary and secondary schools. The reform so much to be desired must begin at the bottom.

The Pathological Society has always been the young man's Society. Here most of us first dared to appear in public and here we always received a considerate and courteous hearing. Even as internes we occasionally had the opportunity of presenting specimens. Every official meeting at 13th and Locust Streets was followed by an adjourned and unofficial session at the University Club at 1510 Walnut Street and later, when the Society had moved to 22nd Street, the "private meetings" took place at the Rittenhouse Hotel. At these sessions with the frothy infusion of the hop as nectar and with pretzels and cheese for ambrosia, the young aspirants for professional honors discussed medical, scientific and literary subjects for an hour or more and cemented those fine friendships that have given to medical life in Philadelphia its greatest charm.

A number of popular members of the group are dead: Samuel Kneass, highly cultured and a capable but dilettante bacteriologist; Joseph Sailer, honorable, studious and with a refined taste in literature and art; handsome A. O. J. Kelly, one of the most promising of the group, cut off in his prime by diabetic coma in days before insulin. Two other men are no longer with us though still in the land of the living: brilliant Alonzo E. Taylor in whom speech could not keep pace with speed of thought, and gigantic, philosophic David Edsall to whom we looked up in a double sense.

Fame is evanescent. I often refer in my lectures to the great men of my student days, only to find that my auditors look blank. The men who were the giants of our youth are forgotten. Immortality is hard to achieve. It is rarely achieved consciously. The villain who tried to do so by burning the Temple of Ephesus remains unknown. Few of the early members of our Society are now more than names, if that, to the present generation, but while they lived they worked industriously and joyously to advance the young science of pathology and the still younger one of bacteriology. There is just as much to be done now as there was fifty or seventy-five years ago, only the point of departure is changed. The number of things unknown is infinite and no matter how much we take away from infinity, infinity remains. We may wonder and may smile at our "pathological" forbears for not realizing that tuberculosis, diphtheria, malaria and pneumonia were due to living organisms, but what will they who follow us say at the Centenary Celebration of this Society about our own psychic blindness in not discovering the cause of high blood pressure, of cancer, of leucemia, of pernicious anemia, all of which may lie just around the corner.

Bernard Shaw says in one of his inimitable letters to Ellen Terry: "I like the state of becoming, with a goal in front and not behind." Let that be the motto of our Society—let our future be in front and not behind.

[From Schenckius: Observationum Medicarum, Francofurti, 1609.]

EDITORIAL

THE "COLLOQUIOS" OF GARCIA D'ORTA

IN 1563 there was published at Goa a book by Garcia d'Orta entitled "Colloquios dos simples e drogas e consas Medicinais da India," which was not only an authoritative and remarkably complete work on the botany of the Indies, but also presented the earliest worthwhile descriptions of a number of tropical diseases including cholera and beri-beri.

The value of this work was recognized from an early period. It would be difficult to overestimate its usefulness to the explorers and colonizers of tropical countries and its publication came at a time when such activities were at their height. The "Colloquios" were translated into English and most of the European languages. In commemoration of the four hundredth anniversary of the departure of Garcia d'Orta for the East on his great journey Professor Carvalho has published a most interesting and original account of his life and work.[1] Hitherto his race, the chief dates of the events of his life, and many other important details concerning d'Orta have been unknown or veiled in dispute. In recent years the attention of English readers has been directed to the work of this great scholar and scientist of the sixteenth century by the publication of the "Colloquies," by Sir Clements Markham, published in 1918, and our readers may recall the interesting article by Dr. Louis H. Roddis on d'Orta and his work which was published in the ANNALS in 1929.[2] It is to be hoped that Professor Carvalho's work will be translated so that it may be available to the large number of those in this country who would be interested in the results of his research.

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[1] Garcia d'Orta. Comemoraçao do Quarto Centenario da sua partida para a India em 12 de Marco de 1534. Coimbra. Imprenza da Universidade, 1934.

[2] New Ser., vol. 1, p. 198.

BOOK REVIEWS

In Cantesiomo e Magia. By Arturo Castiglioni. Illus. Mondadori, Milan, 1934.

During the recent visit of Professor Castiglioni to this country his lectures on various subjects of medical history attracted widespread attention and were much appreciated. Students of history are unanimous in praise of his great "History of Medicine," and his recently published history of Italian Medicine in Clio Medica[1] has excited much admiration. The volume before us amply fulfils the promise of its predecessors. We know of no other work which so thoroughly covers the subject of witchcraft, sorcery and magic from the earliest times to the present day, because a belief in magic prevails quite universally even in our machine age to a dangerous extent, as witness the recent "hex" murders in Pennsylvania. Two of Castiglioni's most interesting chapters deal with modern magic, divination and spiritualism. Beginning with a careful study of what is meant by the various terms somewhat loosely applied as to magic, sorcery, witchcraft and incantations, Castiglioni studies their various applications to the customs of primitive peoples, including the "taboo" and "totem" practices found so widely distributed throughout the world. In succession he deals with the magic practices of India, Babylon, Egypt, of the Jews, in pre-Columbian America, among the Chinese, and in Ancient Greece and Italy. The parallelism of ideas and practices under such varied conditions is amazing. His discussion of Astrology and Alchemy as forms of magic is most interesting. With the Renaissance, the re-birth of science, magic inevitably declined among the educated but that it still persists is well shown in the chapters already referred to in the beginning of this review. An excellent bibliography, which shows how thoroughly Professor Castiglioni is cognizant with the literature of the subject in all languages, and a good index, furnish an appropriate conclusion to this most delightful and comprehensive work on a most intricate subject. It is to be hoped that an English translation will render it available to those who can not read it in the original.

Japanese Medicine. By Y. Fujikawa, M.D. Translated from the German by John Ruhräh, M.D. With a Chapter on the Recent History of Medicine in Japan by Kageyas W. Amano, M.D. With 8 illus. Clio Medica XII. N. Y., Paul B. Hoeber, Inc., 1934.

This latest edition to the series "Clio Medica" is an extension of a short history of Japanese medicine which was written for the Department of Education of the Japanese Government for distribution at the International Exposition of Hygiene held at Dresden in 1911. As the original work prepared by Dr. Fujikawa ended with that year, Dr. Amano has continued it down to the present. Originally written in German the translation into English has been made by Dr. Ruhräh, the translation being authorized by the Author and the Japanese Government.

Passing by the mythical period of purely theurgic medicine the first introduction of anything approaching real medical practice was due to Chinese influences, partly by Chinese physicians who came into Japan, and partly by young Japanese who had been sent to China at government expense to study medicine. This occurred about the beginning of the seventh century A.D. and henceforth the medicine of Japan was dominated by Chinese teaching and practice for many centuries, though from the fourteenth century medical works by Japanese authors became frequent.

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[1] Italian Medicine. Clio Medica VI. N. Y., Hoeber, 1932.

As is well known, the Portuguese were the first Europeans to establish commercial intercourse with the Japanese, and a little after the middle of the sixteenth century a number of Portuguese missionaries were allowed to settle in the country. By order of the government a large church was built for them in Kyoto, and European physicians who were attached to the missionaries established hospitals wherein they performed surgical operations and cared for the sick, especially the leprous. In 1785 missionaries were expelled from Japan, but some of the Japanese whom they had taught continued to practice according to European methods. In the seventeenth century the Dutch succeeded in establishing commercial relations with Japan, and soon a number of Dutch physicians once more brought European medicine into the country. A translation of parts of the works of Ambroise Paré was made by a Japanese and published in 1706, and another translation appeared in 1713. These works had a powerful and lasting influence on Japanese surgery. In 1773 Mayeno, a scholarly physician of Aoki, dissecting a body and comparing his findings with the anatomic plates in Kulm's anatomy, of which he had procured a copy, was struck with the correspondence of the parts as exposed in dissection with Kulm's plates, and with the inaccuracy of the pictures and descriptions given in Japanese and Chinese works on anatomy. Mayeno with some colleagues labored for four years and then published their epoch-making translation of Kulm's work, with its accurate anatomic plates, in 1773. The contributions of many great Japanese scientists are well dealt with in the concluding chapter by Dr. Amano.

This delightful little book is a record of wonderful achievement made in comparatively few years by a great people.

The Greek Herbal of Dioscorides. Illustrated by a Byzantine A.D. 512, Englished by John Goodyer A.D. 1655. Edited and first printed A.D. 1933. By Robert T. Gunther, M.A., Hon. L.L.D. With 396 illus. Printed by John Johnson for the Author at the University Press, Oxford, 1934.

Dr. Gunther has performed a great service in rendering available the only English translation of this famous Herbal. Compiled by Dioscorides of Anazarba in Cilicia in the first century of the Christian era it was for more than fifteen hundred years the standard work on medical botany. The translation here printed for the first time was made by John Goodyer, a famous English botanist, between 1652 and 1655. The manuscript containing the Greek text with an interlinear translation has lain in the library of Magdalen College unnoticed and unused since it came there with Goodyer's library in 1674. Dr. Gunther has added greatly to the interest and charm of the book by including in it nearly 400 illustrations made by a Byzantine artist in the early part of the sixth century to accompany a copy of the Herbal which was presented to Juiliana Anicia, the daughter of the Emperor Anicius Olybrius. He has also preserved the text as written in the rich, racy sixteenth century English of Goodyer. The work deals not only with plants but also with "vines and wines," and "metallic ores," being really a pharmacopeia.

It is full of interest also to the student of English literature. In it the reader of Shakespeare will find many things bearing on references in the plays, such as a description of the medlar tree to which Mercutio so indecently alludes in Romeo and Juliet, and of the samphire, the dangers of gathering which are referred to by Edgar when he tells Gloucester in his description of what he sees from the summit of an imaginary cliff:

> . . . Half way down
> Hangs one that gathers samphire, dreadful trade!

Of course mandragora is fully described, but the legend of the dreadful results to those who dig it up is not given, Dioscorides being too scientific and practical to believe the tales which were accumulated on the subject during the Middle Ages. Dioscorides states that it is a powerful soporific and much used to prevent pain by physicians "when they are about to cut or cauterize." The loathesome remedies made of the excreta of humans and animals so much favored during so many centuries are duly described and awarded their places as remedies.

This valuable work adds another item to the great debt which those interested in the history of science owe to the learning and industry of Dr. Gunther, who in many previous volumes has given to us the results of his hard labor and assiduous research into many hitherto uncovered sources of great value.

The Chinese Medical Monthly. Official Organ of the Medical Profession in China, The Chinese Medical Association. Peiping (Pekin) China. Parasitology Number, Professor Fülleborn Memorial, November–December, 1933. Vol. XLVII, Nos. 11 and 12.

This very large and most interesting number of the *Chinese Medical Monthly* is dedicated to the memory of Professor Freidrich Fülleborn, the distinguished Director of the Institute for Tropical Diseases at Hamburg, who died on September 9, 1933, and is in every way a suitable tribute to one who did so much to further the study and knowledge of tropical diseases and parasitology. A striking portrait of Fülleborn accompanies a sympathetic account of his life and labors by R. Hoeppli.

Owing to limitation of space it is impossible to review in detail the twenty-nine original articles on parasitology which appear in this special number of this important medical journal. Suffice it to say that all of them bear evidence of the highest scientific excellence and manifest the splendid work being done in the study of parasites throughout China. Some of the articles are excellently illustrated. We feel that an expression of appreciation of the editorial skill of Dr. C. E. Lim, of Peiping, and Dr. James L. Maxwell of Shanghai is appropriate. Under their supervision the *Chinese Medical Journal* has achieved rank as one of the most important medical journals in the world.

The editorials and notes which appear from time to time in the pages of this journal are of great value, in addition to the uniformly high tone of the original articles. An issue like the present will emphasize the value of the addition of this important publication to the shelves of any medical library in the West, as an essential aid in the study of Eastern medical problems and topics.

Medicine: A Voyage of Discovery. By Josep Lobel, M.D. Translated from the German by L. Marie Sieveking and Jan F. D. Morrow. N. Y., Farrar and Rinehart, 1934.

This book, according to the Introduction, "aspires to show a transverse section of medicine," and, beginning with biology, the Author writes in the pages which follow, a summary of the rise and progress of various branches of the healing art down to the present day, finishing with a presentation of the latest achievements of psychoanalysis. Written in popular style, it is obviously intended as a presentation of the various aspects of medical science to lay readers. Whether the average layman is capable of digesting the various subjects and assimilating what is good for him is open to question. There have been so many books of a somewhat similar character published recently that there must be a demand for them. This book differs from most of the other attempts at popularizing medical history in that the Author deals more fully with the modern aspects of the various branches of medical science than is usual.

The absence of references as to the source of the Author's statements detracts from the value of the book to the professional reader, and there is a general lack of regard for strict accuracy which leads to lack of confidence. In the section on Anatomy the account of the Burke and Hare tragedies is so inaccurate that it seems impossible it could have passed through the hands of the Author and translators. The scene of the murders is placed in "an inn near London"; Hare is said to have taken the body to Surgeon's Square and asked for "Professor Monroe" (*sic*); the total murders by Hare and Burke are placed at "some thirty," instead of sixteen, and they are said to have opened "a branch concern" in Dublin. Such inaccuracy cannot be blamed on the printer.

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